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THE UNIVERSITY OF ALBERTA

LEARNING STYLES: THEORY INTO PRACTICE
A TEACHER'S REFLECTIONS

BY

NANCY JACKSON

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SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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OF MASTER OF EDUCATION.

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled LEARNING STYLES: THEORY INTO PRACTICE - A TEACHER'S REFLECTIONS
Submitted by NANCY JACKSON
in partial fulfillment of the requirements for the degree of MASTER OF EDUCATION.

Theresa V. Craig
(Supervisor)

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Janis Blakey

Date: Oct 2, 1989

DEDICATION

This thesis is dedicated to my husband Glenn and daughter Heather.

ABSTRACT

This study attempted to investigate the translation of learning style theory into the researcher's teaching practice and classroom environment. Many learning style theories are being discussed in the literature that document the value of such theory to both the student and teacher (Butler, 1984; Dunn and Dunn, 1983; Gregorc, 1982; and Swassing and Barbe, 1982). Some school districts are investigating the applicability of this learning style theory in the classroom. This study explored how readily and meaningfully this theory does translate into the reality of the classroom.

In attempting to answer this question, the researcher studied and documented her own teaching with one grade seven language arts class for a six month period. A log and journal were kept by the researcher and written in daily. Knowledgeable observers were invited to observe the class on five separate occasions. Interviews held after each observation were transcribed and validated. The students' reflections on their work were recorded on Project Response Sheets for inclusion in the study.

Analysis of these multi-modal sources of data uncovered the following themes: Emerging Teacher Role, Environment, and Emerging Student Role. Some of the study's findings corroborate those of other researchers. For example, planning

tended to follow Butler's (1984) notion of Style Differentiated Instruction and many of the Dunns' (1983) recommendations with respect to environment. Other findings, however, like the importance of teacher energy and the impact of learning style theory on the role of the student have not been discussed in the literature.

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CHAPTER ONE

Introduction to the Study

> Classrooms and students are particular in character. Theory is general. What the teacher must be able to do is see the connection--if there is one--between the principle and the case. But even where such a connection exists, the fit is never perfect. An imaginative leap is always required. But if we have no rules to follow, then how should we take this leap? (Eisner, 1983, p.9)

Background to the Study

"Our autobiographies enter into all our experiences and we cannot leave the person we are outside the classroom door" (Butler, 1984, (p. 47).

Autobiographical Statement

After eight years of teaching junior high language arts for a large urban school board, I was granted a sabbatical leave for the 1984-85 academic year. At that time I was not at all sure what area I wanted to pursue, but I did have an interest in exploring teaching procedures that could be used in teaching academically unsuccessful students. My existing materials and techniques were not successful with these students, and I did not know why. And I knew that as long as my teaching career continued, I would continue to be responsible for teaching these students.

It was during the experience of trying to decide upon a topic for a workshop presentation required in a curriculum class that a fellow graduate student and I became aware of learning style theory. In addition to presenting a workshop to our class, we were also required to keep a journal which recorded our meetings and our feelings about them. As some selected entries from my journal indicate, the more we explored the theory, the more intrigued we became.

> We had a preliminary discussion over coffee break and came up with the idea of alternative learning styles . . . . Just because some people learn in different ways should not invalidate them . . . . Met with Michael today . . . . This meeting is hard to write about because the ideas flew fast and furious . . . you really have to be there . . . . I am not saying that we should teach in ways that exactly match a particular student--but surely everyone can be comfortable some of the time . . . I am really excited by this--it makes so much sense. I've been talking to people from other subject areas about the whole notion of learning styles, and it fits with much of the reading they are also doing. Michael and I are going to try to set up an independent study course next semester to have a more in depth look at these ideas--we are just skimming the surface now. There could be a thesis topic in here somewhere.

In our independent study class Michael and I explored learning styles both theoretically and practically. We immersed ourselves in a concentrated reading of a wide range of learning style theory and had numerous discussions about it. In doing so we began to appreciate the wealth of theory in existence. And we began to understand the philosophically diverse way in which each theorist approached the concept of learning style.

Explorations of theory in practice were also made. Two elementary schools and one high school were visited. The high school and one of the elementary schools were chosen because they claimed to have incorporated learning style theory into their philosophical base and day-to-day existence. During our visits to each school tours were made, discussion with administrative and teaching staff were held, and observations of students at work were conducted. In addition, we were given materials outlining programs and intents to take away for further reading. The second elementary school and a high school program no longer in existence were also explored because they had intuitively taken learning styles into account with their student-centered approaches. Discussions with personnel involved with these programs on all levels from teacher to principal to associate superintendent, as well as a visitation in the case of the elementary school, were conducted.

Following each visitation, a descriptive account was written of each school. The data for these accounts were compiled from observation, interview, and document analysis. In each account we tried not only to describe what we had observed but also to tie these observations to the learning style theory we understood.

It was during this time that I began making connections between learning style theory and other diverse areas of my graduate work. For example, in writing about the role of the English teacher for a graduate Secondary English seminar, I stated

> English is a personal subject. The writing that students do and the responses they make to literature are private and personal, yet teachers encourage them to make these reactions public. The ideal classroom is, therefore, one that is considered "safe" by the students where the teacher is compassionate to their efforts and needs.

Michael and I conducted several workshops on learning style theory and its application for both university undergraduate classes and school board consultants. We also began to explore and write about what we believed were the philosophical underpinnings of learning style theory. The belief of Abbs (1979) and Lasch (1984) that modern educational systems contribute to a loss of selfhood by being overly concerned with facts gave us much food for thought. During the writing of a paper for a spring session course, we synthesized our beliefs about learning style theory theoretically, philosophically, and practically.

September, 1985 meant a return to the classroom for me because my sabbatical year was over. I had decided not to return to the same school and instead would be joining the staff at Midview Junior High School in a large urban center to teach three grade seven and one grade eight language arts class in addition to one grade seven social studies class.

I was pleased with this assignment because I had worked with my principal, David, previously and he was sympathetic of and supportive towards my ideas. I was also a little scared as an early journal entry indicates.

> Scared because I was not at all sure I could pull off what Michael and I had seen in the schools we had visited. I guess I had every confidence in the theory . . . I mean I felt like I had been given a huge gift--an insight into both how I learn and therefore others as well . . . . I remember thinking of all the students that I would have, and I really hoped I could do a good job for them. Here I was--walking into the "perfect" school teaching situation--an understanding principal who was going to allow me to experiment with learning style theory . . . . Could I possibly make a difference to some of these students?

In September 1985 I attempted to meld my understanding of learning style theory and my experience with classroom teaching. Obviously for me the process was and is an emerging one. This study is the chronicle of my "imaginative leap-taking" and the implications that can be drawn from this.

Research Interests

Learning styles is a hypothetical construct, an umbrella concept, that basically attempts to describe the different ways people learn. Currently many learning style theories including those of Butler (1984), Dunn and Dunn (1978a), Gregorc (1982), McCarthy (1980), and Swassing and Barbe (1979) have gained acceptance amongst educators. Even though these

8

theories all attempt to describe learning preferences, there are many differences among them.

Many school districts are presently considering learning style theory and its applicability in the classroom. In doing this, it becomes necessary to weigh not only the merits of a number of different theories but also the ease with which they can be adopted by practicing classroom teachers and incorporated into their classrooms. This notion is supported by Connelly and Clandinin. "An idea appears with highly desirable features, perhaps with support from school research. But as the idea is applied to real school situations in a variety of places, its limitations begin to show up" (1988, p. 87). Much credence is currently being placed on the theory, but theory is, by itself, lifeless. The meaning that a teacher brings to a theory, the interpretation that he/she makes of it, and the translation of theory by a teacher into actual classroom practice all make a theory come to life.

That the theories have value has been well documented by many researchers. For example, a large body of research has revealed that if teaching style and the instructional environment are matched with student learning style, learning will be enhanced (Dunn and Dunn, 1982a; Butler, 1984). In addition, there exists a vast amount of theoretical and practical knowledge for teachers to consider when attempting to incorporate learning style theory into their teaching practice and classroom environment. But how does the theory relate to the practical world of the teacher? "Sometimes these fundamental and all-embracing terms (theory and practice) have come to be divisive in our curriculum world" (Connelly and Clandinin, 1988, p. 87). It is my belief, therefore, that how a teacher translates learning style theory in a day-to-day basis in his/her interaction with students needs to be explored.

The Research Question

Reinterpreting my past teaching experiences through learning style theory began when I returned to teach junior high school language arts in September, 1985. Through the application of learning style principles in my day-to-day teaching, there emerges an environment, a curriculum, and a new focus of teaching. Through this process of emergence arises the central research question, Does the learning style theory I have learned translate into practice in my junior high language arts classroom?

This central question in turn gives rise to three subsidiary questions.

1. How do I translate learning style theories into the instructional environment and procedures?

2. What impact does the implementation of learning style theory have on my role as a teacher?

3. What is its impact on the role of the students?

Significance of the Study

Learning style theory has a strong research base. The theories of Butler (1984), Dunn and Dunn (1982a), Gregorc (1979), McCarthy (1980), and Swassing and Barbe (1982) have each defined learning style and have explored ways in which student learning style impacts upon the instructional environment. Learning style theory has also been applied to how teachers interact with the students, the curriculum, and the instructional environment. This research has focused primarily on the identification of various teaching styles and the correlation between these and a particular teacher's learning style (Butler, 1984; Dunn and Dunn, 1982a). Attention needs now to be directed toward how a teacher interprets theory and translates this theory into practice.

A study that encompasses a teacher's experiences and reflections for a six month period as opposed to a shorter time span is important. There may be stages a teacher passes through in interpreting the theories in the most particular context of his/her students and classroom. For example, is it easier for teachers to modify the classroom environment first before they start changing their instructional methods? Are some theories easier to translate than others? In addition, a study that explores the translation of theory into practice for this time period should help further the practical knowledge teachers can employ when considering incorporating learning style theory into their classroom practices and procedures.

Finally, previous research has tended to consider only one theory at a time or, at most, a combination of two theories (Prentice, 1984). It may be possible that knowledge of several theories is important for teachers in the reality of the classroom. A naturalistic study that focuses on the application of learning style theory on a day-to-day basis should help further understanding regarding the dynamic interplay between the theories, the actions and reactions of the teacher, and the students and classroom.

Definition of Terms

1. Learning styles are "characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (Keefe, 1979, p. 4).

2. Style Differentiated Instruction is "the process that promotes the intentional match or mismatch of learner style to instructional methods--strategies, technologies, techniques, and activities" (Butler, 1984, p. 185).

3. Teaching style is "a set of distinctive behaviors which places mediation demands upon the mind qualities of both the learner and teacher" (Butler, 1984, pp. 51-52).

Delimitations

1. The study is delimited to a six month period, January to June, 1986.

2. The study will concern itself with my experiences and reflections based on one grade seven language arts class only even though I am attempting to incorporate learning style theory into the teaching of all my classes.

3. The study is delimited to a consideration of four learning style theories.

Assumptions

1. The principles of learning style theory are valuable for both the student and teacher.

2. I can correctly interpret and apply learning style theory in my teaching practice and classroom environment.

3. Through reflective journal keeping and its subsequent analysis, I can accurately portray my thoughts and experiences.

CHAPTER TWO

Review of the Literature

Introduction

Currently there are many different learning style theories that are being discussed in the literature. In this chapter I will, however, confine my review of the literature to only those theorists I considered in my study. The theories of Butler (1984), Dunn and Dunn (1983), Gregorc (1979), and Swassing and Barbe (1979) are outlined in Part One. Part Two discusses the recommendations each theory has for the practicing classroom teacher.

A. Learning Style Theory

Swassing and Barbe

Swassing and Barbe (1979) define learning styles in terms of the modality strengths a person has. "The modalities are the channels through which individuals receive and retain information, and comprise three elements--sensation, perception, and memory. The educationally relevant modalities are the visual, auditory, and kinesthetic" (p. 71). They estimate that 30% of the population has mixed modality strength, 30% visual, 25% auditory, and 15% kinesthetic (1981). Their research suggests that a visual student best understands information presented through notes, diagrams, or pictures; an auditory student through lecture and oral discussion; and a kinesthetic student through activities that involve touching and movement.

Dunn and Dunn

The Dunns have a very comprehensive concept of learning style. Rather than focusing solely on modality strengths, they define learning style as "the manner in which at least twenty-one different elements of five basic stimuli affect a person's ability to absorb and to retain information, values, facts, or concepts" (1983, p. 25). In their model they have delineated the following basic elements of learning style.

1. Environmental
   a) Sound b) Light c) Temperature d) Design
2. Emotional
   a) Motivation b) Persistence c) Responsibility d) Structure
3. Sociological
   a) Peers b) Self c) Pair d) Team e) Adult f) Varied
4. Physical
   a) Perceptual b) Intake c) Time d) Mobility
5. Psychological

a) Analytic/Global b) Cerebral Preference
(1983, p. 25)

For example, their research (1983) indicates that some students learn best in bright light while others prefer dim. Some students need to work while sitting in traditional desks while others learn better lounging in soft chairs. In addition, some students work better alone and others in groups. Students vary in the amount of structure they require to complete a task as well as the amount of mobility needed while completing the task. Not all elements are pertinent to everyone; some of them do not have an effect on how an individual learns. For example, some students learn best in the morning, others prefer the afternoon, and for still others the time of day does not affect learning. The Dunns' research (1983) does report that between six to fourteen elements will usually be a factor in determining an individual's learning style.

Gregorc

From the phenomenological point of view, Anthony Gregorc (1979) defines learning styles as

> those distinctive and observable behaviors that provide clues about the mediation abilities of individuals. It is suggested that people through their characteristics of behavior "tell" us how their minds relate to the world and, therefore, how they learn. These characteristic sets reflect specific mind qualities that persist even though goals and content may change. Learning styles, therefore, consist of those behaviors which give

> clues to the mind qualities the individual uses to interact with the environment and to gather and process data from it. (p. 25)

Gregorc's approach, then, is one that focuses solely on the cognitive aspects of learning styles. His approach concerns itself with the brain's mediating and perceptual qualities. As such, he has developed the ordering dichotomy, sequential and random--and the perceptual dichotomy, abstract and concrete. The perceptual dichotomy relates to the manner in which an individual gathers information. The ordering dichotomy refers to how an individual arranges that information (Butler, 1984). The quality of abstractness allows us to experience the non-physical world. Gregorc (1982) defines abstraction as that which

> enables you to grasp, conceive and mentally visualize data through the faculty of reason and to emotionally and intuitively register and deal with inner and subjective thoughts, ideas, concepts, feelings, drives, desires, and spiritual experiences. This quality permits you to apprehend and perceive that which is invisible and formless to your physical senses of sight, smell, touch, taste, and hearing. (p. 5)

The quality of concreteness allows us to experience the physical world. It

> enables you to grasp and mentally register data through the direct use and application of the physical senses. This quality permits you to apprehend that which is visible in the concrete, physical worked through your physical senses of sight, smell, touch, taste and hearing. (1982, p. 5)

Sequentialness is defined as

> the quality which disposes your mind to grasp and organize information in a linear, step-by-step, methodical, predetermined order. Information is

> assembled by gathering and linking elements of data and piecing them together in chain like fashion. This quality enables you to naturally sequence information. It further encourages you to express yourself in a precise, progressive and logical systematic manner. (1982, p. 5)

The second ordering element of randomness

> disposes your mind to grasp and organize information in a nonlinear, galloping, leaping, and multifarious manner. Large chunks of data can be imprinted on your mind in a fraction of a second. Information is also held in abeyance and, at any given time, each piece or chunk has equal opportunity of receiving your attention. Such information, when brought into order, may not adhere to any prior or previously agreed upon arrangement. This quality enables you to deal with numerous diverse and independent elements of information and activities. Multiplex patterns of data can be processed simultaneously and holistically. This quality encourages you to express yourself in an active, multifaceted and unconventional manner. (1982, p. 5)

All four of these elements are present in everyone,but an individual will usually be dominant in one of the following four categories:

> Concrete Sequential . . . practical, predictable, to-the-point, organized, and structured . . . Abstract Sequential . . . intellectual, logical, conceptual, rational, and studious . . . Abstract Random . . . emotional, interpretive, sensitive, holistic, and thematic . . . Concrete Random . . . original, experimental, investigative, option oriented, and risk taking. (Butler, 1984, p. 12)

Butler

Butler defines learning style as "a general term, an umbrella concept, and a name for recognizing individual learning" (1984, p. 3). She has taken Gregorc's learning style theory and transplanted it into the classroom. In her work she has fully detailed the four different types of learners including the instructional strategies and techniques each prefers.

> Concrete sequentials produce their best, natural work by using approaches that require: structure and pattern, details and facts, practical problems, realistic points, and products and results. The preferred means to learn most commonly cited by concrete sequential learners are:
>
> -hands-on experiences
> -demonstrations
> -results-oriented work
> -computers
> -field trips
> -practical reading
> -mechanical/technical - problems
> -short lectures
> -exact assignments
> -useful ideas
> -learning packets
> -charts
> -checklists
> -worksheets
> -flowcharts
> -data
> -outlines
> -short-term projects-practical assignments
> -labs
> -summaries
> -apprenticeships
> -how-to discussions
> -action/involvement
>
> (Butler, 1984, p. 155)

> Abstract sequential learners produce their best, natural work by using approaches that require extensive amounts of reading, gathering ideas and information, finding out what the "experts" say, analyzing and evaluating the causes, problems, and results of events, actions, and ideas. Ways to learn most commonly mentioned by abstract sequentials are:
>
> -reading
> -writing essays
> -working alone
> -learning content
> -using theories
> -working in the library
> -working with a plan of study, but without competition and time pressure
>
> (Butler, 1984, p. 163)

> Abstract randoms produce their best, natural work by using approaches that require: interpretations and explanations rather than exact answers; communication through artistic media; reading for emotional enjoyment; personalized meaning; and opportunities to work with others. Preferred means to learn most commonly mentioned by abstract randoms are:
>
> -group discussion
> -film strips
> -using themes
> -role play
> -short lecture
> -music
> -arts
> -humor
> -drama
> -peer groups
> -movies
> -television
> -use of fantasy
> -imagination
> -personalized work
> -interpersonal and people-oriented subjects
> (Butler, 1984, p. 169)
>
> Concrete randoms produce their best, natural work by using approaches that require problem solving, open-ended options, different ways to arrive at answers, and independent work. The preferred means to learn most commonly mentioned by concrete random learners were:
>
> -problem solving
> -creating products
> -experiment
> -options
> -few restrictions
> -games and simulations
> -independent study
> -unusual solutions
> -open-ended activities
> -inventing practical ideas
> (Butler, 1984, p. 177)

Butler (1984) recognizes the limitations of her theory when she states that it incorporates only two aspects of the mind, perception and ordering. Perhaps it is because of this that she cautions against using a learning styles label in a reductionistic way. "Diagnosis of concrete/abstract and sequential/random style is misapplied when it is used . . . to confine identity--by insisting on simplifying a person's being to a series of characteristics" (1984, p. 43). She does, however, believe that learning style theory can be a starting point from which a teacher can begin to meet the needs of individual students. "By better understanding the mind of each style in theory, we are in a better position to understand individual differences and needs in reality" (1984, p. 148).

Butler's (1984) theory also states that people differ in the degree to which they are able to express their dominant learning styles. These degrees vary from style appearing naturally all the way through to being masked or hidden. The degree to which a person is able to express his/her style depends in part upon the environment. For example, if a strong abstract random student is taught by a dominant concrete sequential teacher, the student's natural style may flex into one more appropriate for the environment in order for the student to be successful. "Environment may not always accommodate our needs or our desire to use our preferred, natural style but instead may call for one style of behavior" (1984, p. 27).

B. Classroom Recommendations

Swassing and Barbe

Swassing and Barbe believe "the application of an instructional method in the classroom is the only true test of its worth" (1979, p. 53). To that end, they have devised Modality-Based Instruction, a method by which teachers can recognize and build on their students' modality strengths. "Modality-based instruction is a comprehensive approach to education with the central tenet that instruction is organized around a student's learning strengths" (1979, p. 55).

It is Swassing and Barbe's (1979) belief that the learning style needs of the majority of a class are not addressed whenever a teacher presents a lesson. Central to this idea is the notion that teachers tend to teach the way they learn (1981). For example, a strong auditory teacher will tend to employ a great deal of lecture and discussion in his/her teaching. Students who are strong visual or kinesthetic learners may find this teacher hard to understand and follow. "A shortcoming inherent in any unimodal approach is that the initial objectives are antithetical to the learning strengths of the majority of children in the classroom" (1979, p. 56).

Modality-based instruction seeks to redress this imbalance. Swassing and Barbe urge the teacher to alter his or her teaching strategies when "the material has been initially presented by the teacher and one or more of the students in the class fail to grasp the material" (1979, p. 62). For example, if students have failed to remember how to spell a word when it has been presented orally to them, the teacher has two options. First, for the visual learners, he/she could write the word on the board or allow the students to write it on paper or on their "mind's eye." Allowing the students to trace the word with their fingers or allow them to assemble it from cut out letters is a second strategy appealing to kinesthetic learners. Knowing each student's learning style is critical to any teacher incorporating this approach. Swassing and Barbe (1982) advocate assessing student learning styles with their instrument so teachers will know which approach will work with which student.

The benefits of modality-based instruction, according to Swassing and Barbe, are two-fold. They believe that the amount of information students learn and the ease with which they learn it will be increased. Because of this, they also state "students will develop independence, self-confidence, and a more positive self-image" (1979, p. 63).

Dunn and Dunn

Unlike Swassing and Barbe, Dunn and Dunn (1983) believe that learning style needs to be considered long before learning becomes difficult for an individual student. They believe that an individual student's learning style should be matched with the environment as much as possible because their "experimental studies have evidenced statistically significant increased academic achievement when individual traits have been matched with complementary resources and environments"

(1983a, p. 504). Their approach is a diagnostic/prescriptive one.

They suggest (1983a) that teachers can begin paying attention to their students' learning styles in one of three ways. Alternative A is to modify the classroom environment by allowing for differences in sound, light, temperature, and design. Many practical suggestions are given for "effectively redesigning any (small or large) classroom in one hour and with no money" (1983a, p. 42). Alternative B suggests teachers can begin working with students by paying attention to modality strengths. Students are introduced to new information through their dominant modality, the concept is reinforced through a secondary modality, and reviewed again through the weakest one. Allowing some students who are self-oriented to work alone with Contract Activity Packages is the third alternative by which teachers can begin to address student learning style.

Many other practical suggestions for implementing learning style theory into the classroom are given by the Dunns (1978). These include the designing of tactual/kinesthetic materials, contract activity packages, and multisensory instructional packages. Small group techniques for students who like to work with peers are given. Homework and study tips based on a student's modality strength are also suggested.

Butler

While the Dunns' (1978) approach to learning styles is one of diagnosis and prescription, Butler (1984) is more temperate. She has provided teachers with a comprehensive rating scale for each learning style.

> With rating-scale information, a teacher has the opportunity to assess and work with a child from a particular point of understanding. It is the teacher's responsibility to use rating-scale information with discretion, vigilance, and caution. Such rating-scale information should never be used to label students, or to confine their experiences. Nor should it be used to box students into one style. (1984, p. 142)

Rather than simply increasing academic achievement, Butler's goals for making teachers aware of learning styles are considerably more global.

> Rating scale information should be used to provide the student with experiences, understanding, and options so that with these, students may be able to increase academic achievement, learn to adapt to other styles when necessary, and gain appreciation for the individual differences of others. (1984, p. 142)

Unlike Swassing and Barbe and Dunn and Dunn, Butler plays close attention to the notion of teaching style. While the other theorists tend to agree that teachers probably teach the way they learn, Butler details and includes the concept of teaching style in her theory. She believes that a particular teacher's learning style determines how he/she translates curriculum objectives into classroom practice. For example, concrete sequential teachers tend to teach concrete sequentially. They design their course paying attention to

> having students move efficiently from one activity to another. CS teachers help students learn to organize their time, finish projects, and apply knowledge in practical ways. To accomplish these goals, CS teachers arrange the day around short lessons that have clear starting and stopping points, utilizing such strategies as:
>
> -self-paced, individual lessons
> -performance contracts
> -programmed instruction
> -demonstration teaching
> -field trips
> -apprenticeships
> -objective testing
> -computer-assisted instruction
> -specialized training sessions
> -informational lectures
> -primary resources
> -timed tasks
> -mastery learning
>
> (1984, p. 78)

Contrast the course design of concrete sequential teachers with that of abstract random ones who

> organize their classrooms so that students may have many opportunities to work together, to learn from each other, to share with and help one another. These teachers use such strategies as:
>
> -group-based study projects and investigations
> -teaching/learning teams
> -discussion groups
> -lecture/discussion groups
> -short reading assignments followed by group discussion

-classroom meeting format
-cooperative learning

(1984, p. 98)

Butler (1984) believes that each teaching style places certain mediation demands on students. For example, a strong abstract random student will have difficulty learning from a teacher who only uses a concrete sequential teaching style. In such a case not only will academic achievement be affected but also a student's self-concept and self-esteem.

> Too often students do not learn because they do not understand how to meet the style requirements of the material, and do not realise that style mismatch is the problem. They may fault themselves, blame the teacher, develop a low self-concept, or become discipline problems in order to avoid the material and their own inability to handle it. (1984, p. 215)

Unlike the Dunns, Butler (1984) does not believe that teaching and learning style should always be matched. Consistent matching will lead to increased academic achievement and an improved self-concept, but may block personal growth and awareness. Consistent mismatching can lead to impaired academic achievement, a low self-esteem, and a complete rejection of school. Guided mismatch, however, can lead to students gaining new insights about themselves.

Butler has incorporated her beliefs about learning style into Style Differentiation Instruction (SDI) which "is the process that promotes the intentional match or mismatch of learner style to instruction methods--strategies, technologies, techniques, and activities" (1984, p. 185). She has developed five different levels of SDI. At Level I the

Single Approach "the teacher continues to use one style of teaching but provides style differentiation bridges to help all learners" (1984, p. 190). Students must adjust their style to the teacher's.

In Level II, the Variety Approach, teachers try to meet the needs of all learners but feel overwhelmed in their attempt to do so. Each learning style is addressed approximately one quarter of the time in each lesson.

At Level III, teachers automatically use style bridging techniques and use the Variety Approach for an increasing amount of time. They "experiment with the Multiple Approach by offering qualitatively different stylistic options to students from which students may choose their preference" (1984, p. 193).

In Level IV teachers "are comfortable in designing and offering options for students a majority of the time--the Multiple Approach" (1984, p. 194). Teachers at this stage automatically try to understand all situations from each individual student's perspective. They want each student to not only be familiar with his/her style but also to realize the importance of style flex.

Level V,, the Dynamic Approach, completes the SDI process. At this level teachers "operate from a natural style base, use style flex automatically, and provide qualitative options for all student" (1984, p. 197).

Butler also integrates the different thinking skills as outlined in Bloom's taxonomy with SDI. These are knowledge, comprehension, application, analysis, synthesis, and evaluation. She believes that it is possible and desirable for students and teachers to flex into nondominant learning styles at the lower end of Bloom's taxonomy: knowledge, comprehension, and application. It is also Butler's belief that flexing is not possible at the synthesis and evaluation levels. With these students must use natural mediation channels. Students can, therefore, effectively experience mismatch with their learning style at the lower end of Bloom's taxonomy, but this is not possible at the upper levels.

Conclusions

Each of the theorists discussed presents the concept of learning style in a different manner. While they all attempt to define learning style, they incorporate different characteristics in their definitions, have different suggestions for implementation, and have differing beliefs regarding the value of their theories for the practical world of the student and teacher. With so many differing perspectives not only does the translation of theory into practice become problematic but also the means of capturing the process. Chapter Three outlines the methodology used in an attempt to describe my experiences in translating learning style theory into my teaching practice and classroom environment.

CHAPTER THREE

Methodology

Introduction

This chapter outlines the methodology used by the study under the following headings: Qualitative Research, Case Study, Triangulation, Participant Observation, Log and Journal, Interview, Document Analysis, Data Analysis, and Ethical Concerns. A description of the methodology is given and a rationale for its use offered.

Qualitative Research

A qualitative research approach was used in an attempt to answer this study's central research question, "Does the learning style theory I have learned translate into practice in my junior high language arts classroom?" A more empirical design could have been suggested. For example, attributes of selective learning/teaching styles could have been placed on checklists to be used by classroom observers knowledgeable in learning style theory at various times during the year. Lesson plans could be analyzed for their dominant teaching/learning style(s). Data from these two sources could then be combined in an attempt to verify the existence of learning style theory in my classroom practice. But human behavior does not occur in a vacuum. Is there something about being a "regular" teacher in a "regular" school with a "regular" teaching load that either enhances or inhibits the translation of theory into practice? As Wilson points out, "Human behavior is complexly influenced by the context in which it occurs. Any research plan which takes the actors out of the naturalistic setting may negate those forces and hence obscure its own understanding" (1977, p. 253).

Studies which have explored matching learning style with learning environment report an increase in student achievement (Dunn, 1983) and an increase in student self-esteem (Butler, 1984), both of which are desirable results. But what does this matching mean for the students and teacher? What does each need to learn before this can occur? Is there a cost? If so, is the cost worth the perceived benefit? "Any explanation of behavior which excludes what the actors themselves know, how they define their actions, remains a partial explanation that distorts the human situation" (Spradley, 1980, p. 16). A qualitative study can explore these questions that previous research has found difficult to address.

Case Study

This study is a case study with its focus on "contemporary phenomena within some real life context" (Yin, 1984, p. 1). According to Stake (1978), a case study is appropriate "when the aims are understanding, extension of experience, and an increase in conviction in that which is known" (p. 6). It is an aim of this study to add to the understanding of the process of translating learning style theory into practice.

> In a case study design, the focus of the research is one unit of analysis. The researcher defines or designates a single unit of analysis regardless of the number of events, participants, or phases of process recorded in the field notes. (McMillan and Schumacher, 1984, p. 322)

One grade seven language arts class was the focus for this case study.

It is a feature of case studies that they cannot be replicated and hence cannot be considered generalizable. McMillan and Schumacher do not consider this a shortcoming. "Case study design merely reflects the immediate purpose of ethnographic research: to discover and to understand the complexities of an single phenomenon" (1984, p. 322). Stake takes this issue further and makes a claim for a "naturalistic" generalization. "To know particulars fleetingly of course is to know next to nothing. What becomes useful understanding is a full and thorough knowledge of the particular, recognizing it also in new and foreign contexts" (1978, p. 6).

In their attempt to give such a comprehensive picture of one situation, it is characteristic of case studies that they

> feature descriptions that are complex, holistic, and involving a myriad of not highly isolated variables, data that are likely to be gathered at least partly by personalistic observation; and a writing style that is informal, perhaps narrative, possibly with verbatim quotation, illustration and even allusion and metaphor. (Stake, 1978, p. 7)

It is hoped that in attempting to describe the particulars of my experience and observation, this study will contribute to an understanding of the process of translating theory into practice for both the students and teacher.

Triangulation

Yin (1984) believes that one of the great strengths of case studies is their ability to incorporate data from many sources in their attempt to describe all the "particulars." Using multiple sources of data provides a depth that may otherwise be missing. As Spradley has pointed out, "the more you know about a situation as an ordinary participant, the more difficult it is to study it as an ethnographer" (1980, p. 61). The "particulars" may not stand out in a field of familiarity.

Multiple sources of data also help to lend validity to a study's findings. "Attempts to triangulate or to build multimethod matrices with qualitative data often result in congruencies which strengthen the validity of the picture one is drawing" (Smith, 1974, p. 346). This notion is echoed by Yin.

> The most important advantage presented by using multiple sources of evidence is the development of converging lines of inquiry, a process of triangulation . . . . Thus, any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information, following a corroboratory model. (1984, p. 91)

Spradley (1980) also encourages the researcher to consider data from many sources. "An ethnographic record consists of field notes, tape recordings, pictures, artifacts, and anything else that documents the social situation under study" (1980, p. 61). While I do not claim to be an ethnographer nor this study to be ethnography, I have used some of the techniques of ethnographic field work.

This study considered the following sources of data: my log and journal, student Project Response Sheets, and the transcribed interviews with the knowledgeable observers. Data was gathered by using techniques of participant observation, document analysis, and interview.

Participant Observation

Participant observation is a research technique borrowed from the field of anthropology. This technique seeks to "understand events in a culture and system from the point of view of the practitioners in the system" (Smith, 1974, p. 364). Participant observation allows the researcher to observe from the vantage point of both insider and outsider. It requires the researcher to "(1) engage in activities appropriate to the situation and (2) to observe the activities, people and physical aspects of the situation" (Spradley, 1980, p. 54). The researcher is both an actor in and observer of the situation under study. The degree of participant involvement varies from none to complete participation. "The highest level of involvement for ethnographers probably comes when they study a situation in which they are already ordinary participants" (Spradley, 1980, p. 61).

There are dangers inherent in being both participant and observer. How is it possible to determine whether or not an ethnographic description has been biased by the researcher? How is it possible for the researcher to safeguard against this? "Because the qualitative researcher does not use familiar quantitative methods of standardizing subjects' expression or researchers' observations, those not acquainted with participant observation fear that the data will be polluted with the observers' subjective bias" (Wilson, 1977, p. 268). Agar believes the issue is not so much one of trying to avoid bias but rather becomes one of to what degree bias has been taken into account by the researcher. "The problem is not whether the ethnographer is biased; the problem is what kinds of biases exist--how do they enter into ethnographic work and how can their operation be documented" (1980, pp. 41-42).

This study attempted to account for my bias as a researcher by incorporating a multimodal approach to data collection. The students' reflections on the Project Response Sheets and interviews with the knowledgeable observers gave a balance to my insider role as reflected in the log and journal. As Wilson has pointed out, "these tensions in point of view--between outsider and insider and between groups of insiders--keep the careful researcher from lapsing into subjectivity" (1977, p. 259).

The participant observer's dual vision has definite advantages for case studies. Knowledge important to understanding the case under study may only be available to insiders. Observations gleaned from both an insider and outsider perspective may help provide a more complete picture than either alone could provide.

> For some topics, there may be no other way of collecting evidence than through participant observation. Another distinctive opportunity is the ability to perceive reality from the viewpoint of someone "inside" the case study rather than external to it. (Yin, 1984, pp. 86-87)

This study required me to be participant and observer at the same time.

Log and Journal

It is usual for the participant observer to keep a log and journal in which observations and thoughts concerning them are recorded. The log is an accounting of the researcher's observations of the situation under study. These observations will later be analyzed in an attempt to understand their meaning for the actors. Immediately following each observation period, Spradley (1980) encourages the researcher to write a condensed account while memory and perception is still sharp concerning the events just observed. These condensed accounts later form the basis for a more expanded account.

Because of my high degree of participation in this study, my log consists of my lesson plans. It was not possible to write a more detailed log while teaching and these plans are a record of how I attempted to incorporate learning styles into my classroom practice. During the three minutes allowed for class change, deviation from my lesson plan and important events I had observed were written in brief condensed accounts immediately following our class each day.

As a research tool, the journal contains the researcher's thoughts and feelings concerning the observed events.

> In addition to fieldnotes that come directly from observing and interviewing (the condensed account and expanded account) ethnographers should always keep a journal. Like a diary, this journal will contain a record of experiences, fears, ideas, mistakes, confusions, breakthroughs, and problems

> that arise during fieldwork. A journal represents the personal side of field work; it includes reactions to informants and the feelings you sense from others. (Spradley, 1980, p. 71)

Agar (1980) also considers journals to be important. While logs focus in on observations made in an objective manner, "diaries focus more on the reactions of the ethnographer to the field setting and the informants, the general sense of how the research is going, feelings of detachment and involvement" (1980, p. 113).

In my research journal each evening I tried to enter into my perceptions of the class's events, the view of the insider. This all important insider perspective can be elusive.

> The process of coming to know ourselves as practising teachers is difficult. So much of our personal practical knowledge is tacit, unnamed, and, because it is embodied in our practice, difficult for us to make explicit. Furthermore, teaching provides little opportunity for reflection. "Doing things" is such a significant part of our daily pressures that we have little occasion to sit back. We do. But do we reflect? (Connelly and Clandinin, 1988, p. 33)

Daily journal writing about my day's events and thoughts concerning them provided a vehicle by which daily reflection could occur and be recorded. I followed Connelly and Clandinin's advice.

> Write as much as you can in the journal. Be descriptive of action, children, events and reactions that you have both while teaching and after you are finished teaching. Record the feelings you have about your practices and the various events that happen. Be alert to past experiences that come to mind as you react emotionally and morally. (1988, p. 36)

Journal writing afforded me the chance to articulate the role of the insider.

Interview

In order to supplement the perspective of the outsider, four knowledgeable observers were each invited at selected times to observe the class and myself. "A case study approach should allow for the use of multiple observers" (Yin, 1984, p. 86). These observers were chosen because they all had extensive experience in teacher evaluation and had, at one time, been practising classroom teachers.

Michael, a university colleague, was knowledgeable in the area of learning style theory. He was also an experienced junior high language arts and drama teacher. Michael's two observations occurred on February 13 and April 30.

In his role as principal, David had observed and evaluated many teachers. David was a previous junior high and high school social studies teacher who had attended learning styles inservices. David's observation occurred on February 20.

Christine had also observed and evaluated many teachers in her role as an Effective Teaching Consultant for a large, urban school board. A previous elementary school teacher, Christine had attended several learning styles workshops. She observed the class on March 13.

Carole, a university professor in the Faculty of Education, was also a highly skilled experienced observer intimately familiar with the realities of classroom teaching. A previous high school drama teacher, Carole had been my learning styles independent study supervisor. She observed the class on June 5.

Each knowledgeable observer knew I was trying to implement learning style theory into my classroom practice. Because I did not wish to limit their observations in any way by defining their scope, the observers were not provided with checklists or guidelines of any sort prior to observation. I believed that the observers' wealth of experiences and diversity of backgrounds would help enrich the outsider perspective.

Interviews were held with each observer immediately following the observation period. These interviews were later transcribed and validated. The interviews had "purpose and direction" (Spradley, 1979, p. 59). Throughout the course of my journal writing emerging themes were tested against the knowledgeable observers' observations. I also attempted to probe the observers' reaction to their observations. "Most commonly case study interviews are of an open-ended nature, in which an investigator can ask key respondents for the facts of a matter as well as for the respondents' opinion about events" (Yin, 1984, p. 83). This probing was designed to elicit concepts and notions I had not previously considered for inclusion as data in the study.

Document Analysis

This study incorporated three types of documents for analysis. Two of them, lesson plans and interview transcripts, have already been discussed. The third type of document originated with the student. On Project Response Sheets, students were asked to reflect upon a recently completed project and answer what they found easy and difficult about it. The questions were designed, in part, to give me a clearer picture of the "inside" role of the student (see Appendix B).

Data Analysis

Analysis was not an event that occurred solely at the end of data collection but was more ongoing in nature. "It should be noted that data collection and data analysis are not necessarily distinct and separate phases in field research" (Duignan, 1981, p. 288). Wilson underscores this notion when he thinks of "participant observation as a series of studies that follow each other in a cybernetic fashion" (1977, p. 260). Agar also concurs.

> In ethnography you learn something ("collect some data"), then you try to make sense out of

> ("analysis"), then you go back and see if the interpretation makes sense in light of new experience ("collect more data"), then you refine your interpretation ("more analysis") and so on. The process is dialectic, not linear. (1980, p. 9)

In this study preliminary analysis was not done in a formalized manner but rather proceeded out of the process of journal reflection in which preliminary themes would emerge to be tested against the reality of my classroom. More formalized analysis followed data collection. "It (analysis) refers to the systematic examination of something to determine its parts, the relationships among parts, and their relationship to the whole. Analysis is a search for patterns" (Spradley, 1980, p. 85). Following Spradley's (1980) suggestion, domain analysis was first conducted with a search for cultural domains. "A cultural domain is a category of cultural meaning that includes other smaller categories" (Spradley, 1980, p. 88). Cultural domains are not directly stated but must be inferred from the data. These were discovered by reading and rereading the data several times while making marginal notations as domains emerged. The data was examined once again as each domain was tested with its cover term and included terms. The semantic term that guided this relationship was "x is a part of y."

Making a taxonomic analysis proceeded next. This type of analysis seeks to show the relationship between the cultural domains. In doing this, a taxonomy also makes clear the differences between items in each domain.

> Like a cultural domain, a taxonomy is a set of categories organized on the basis of a single semantic relationship. The major difference between the two is that a taxonomy shows more of the relationship among the things inside the cultural domain. (Spradley, 1980, p. 112)

The semantic relationship that guided this analysis was also "x is a part of y." Taxonomic analysis revealed the existence of more cultural domains.

Once the taxonomy was complete, attention focused on a componential analysis which involved "looking for the units of meaning that people have assigned to their cultural categories" (Spradley, 1980, p. 131). This analysis fleshed out each domain as thoroughly as the data allowed. At this stage, I discovered that some domains could be subsumed into others.

Making a theme analysis is the final step in Spradley's (1980) method. He defines "a cultural theme as any principle recurrent in a number of domains, tacit or explicit, and serving as a relationship among subsystems of cultural meaning" (p. 141). Themes unify domains. The early themes that had emerged during earlier stages of analysis remained constant.

It should be pointed that making these analyses was a circuitous process rather than a linear one.

> As a concept emerges, and as data begins to fit the concept, some of the properties, including its relationship to other concepts and the conditions under which it is pronounced and minimised, become discernible. With further collection, coding and analysis of data, some concepts are discarded or are merged with more powerful and explanatory ones,

> while others are gradually refined and developed into a framework. (Battersby, 1981, p. 95)

Smith (1976) refers to this process as one of "collapsing outlines." "As pieces are developed, we keep making tentative outlines that put some larger meaningful and logical order into the interpretation. Invariably the tentative outlines collapse in the face of more complex data and outlines (p. 339). (For a detailed examination of this study's "collapsing outlines," refer to Appendix C.) In Smith's words, at the end of the analysis process, "eventually we have an outline which holds. It has a structure reflecting three major dimensions: integrity, complexity, and creativity (1976, p. 340). Integrity refers to the fact that all of the pieces relate to each other, complexity assures that the outline is complex enough to include all the data, and creativity means that it contains some new information.

Ethical Concerns

In accordance with university policy, a research proposal was cleared by the department's ethics committee which ensures the protection of a study's human subjects. Clearance was also sought and gained from the relevant school board.

It is of paramount importance to safeguard the anonymity of all participants in a case study (Spradley, 1979). To that end, the names of the students, school, school system, and knowledgeable observers were all changed.

The students' parents were informed of my intent with this study and their consent was sought, which enabled me to refer to their sons/daughters in this study. I did not refer to any student from whom I did not receive an informed consent form. (Refer to Appendix A for the informed consent letter and form.)

Conclusions

The chapter discussed the sources of data included in the study and the means by which they were gathered. The method of analysis was stated. The focus of Chapter Four is on the themes this analysis revealed.

CHAPTER FOUR

Description of Emergent Themes

Introduction

Three major themes emerge after analyzing the data: Emerging Teacher Role, Environment, and Emerging Student Role. The first of these, Emerging Teacher Role, describes in chronological fashion the way in which my teacher role changed as I consciously attempted to incorporate learning style theory in my teaching practice and classroom environment. These changes are discussed under the headings Finding a Focus, Lesson-as-Planned, Lesson-as-Taught, Lesson-as-Evaluated, and Energy.

Emerging Teacher Role

Finding A Focus

When To Start

Knowing when to start, what to start, and how to start implementing changes in my classroom environment and teaching practice according to learning style theories are decisions that I wrestled with during the beginning of the year. I was in a new school teaching a grade I had not taught for several years. As I stated in an interview with Carole, one of the knowledgeable observers,

> I suppose September to December I spent trying to get my feet wet with the school, trying to figure out things with the staff. I hadn't taught grade seven for about four or five years--trying to remember what they were like. (Carole, June 5, p. 11)

Even the available language arts texts were ones with which I was not familiar. I had to spend time at the beginning or orienting myself to the school, my students, and the content.

What To Start

Finding a way to begin translating the mass of theoretical and practical knowledge I had gained the year before into my teaching role was difficult. The ideas of Butler (1984), Dunn and Dunn (1984), Gregorc (1984), and Swassing and Barbe (1979) all appealed to me to some degree, but how to start and where to begin? Do I begin with changes to my teaching strategies or classroom environment? Whichever path I chose led to a myriad of other choices to be made. Do I start by teaching in ways that would appeal to each different learning style each lesson? If so, which theorists' conception of learning styles should I choose? Would it be better to begin by creating more informal spaces in my classroom with the use of soft chairs? If I do this, how do I decide which students get to use them? I found all the choices I needed to make overwhelming. Because I had so much faith in the theories, the thought that I might not be able to successfully implement them left me, for a time, paralyzed.

At the beginning, then, my focus was very much a theory-centered one, and I had a very difficult time deciding how to limit this focus to a manageable one.

> I really strongly believe that teachers need to have knowledge of many learning style theories, that one theory is not the "answer," . . . but I know now that some days I am juggling sixteen different sized objects and I'm not sure which one I am going to catch next. (Journal, January, 20)

I was trying to explore the application of many theories at the same time and found this impossible.

Rather than narrowing my focus to consideration of only one theory, I narrowed it by trying to decide what my aims were in trying to implement learning style theory. How did I believe implementing of theory would help my teaching? What were my goals?

> I guess I need to decide exactly what it is that I am trying to accomplish. For me, part (much) of the value of learning style theory comes in getting students to trust themselves--their perceptions, their emotions and their thoughts. (Journal, January 20)

My focus now began to be shifted away from strict implementation of theory and more onto how could I best help my students gain self-knowledge and acceptance of how others learn. Armed with this basic belief, I set about formally implementing theory into my teaching strategies and classroom environment.

How To Start

Theoretical concepts from theory were measured against the goals I had. Many of the ideas Dunn and Dunn (1984) suggest for modifying the classroom environment were attractive to me. Dunn and Dunn (1983) also advocate use of their learning style inventory to diagnose student learning style with a view toward prescribing an appropriate approach to each particular learning style. For example, students who work best with others will be placed in group situations, while those who prefer working alone can do so. This prescriptive approach did not appeal to me. Because I believed that some students honestly did not know what type of environment in which they preferred to work, I felt they needed first-hand experience with different groupings, formal and informal areas, and other changes I was considering. Locking students into an environment because of the way they responded on a learning style inventory did not, in my view, allow for choice, change, or growth by the students.

How I began altering the environment was by having the lighting changed in my room by having some of the fluorescent tubes removed. The Dunns' (1983) research indicates that intensity of lighting has a powerful effect on some students. Some students work better in bright light and others in dim. Students were allowed to choose to sit in the bright, medium, or dim areas of the room. The only stipulation was they had to try it for two weeks to see if it was right for them. Allowing students to choose according to lighting density and then reflect upon that choice became the method by which I began implementing learning style theory.

Conclusion

By deciding to modify the classroom environment in accordance with Dunn and Dunn's (1984) concept of learning styles, I had begun to focus in on addressing my students' learning style preferences. My attention now turned toward planning lessons that would also appeal to different types of learners.

Lesson-as-Planned

The Importance of Planning

In the beginning, I found it very difficult to plan lessons that would appeal to Gregorc's (1984) different types of learners: Concrete Sequential (CS), Abstract Sequential

(AS), Abstract Random (AR), and Concrete Random (CR). Gregorc's (1979) theory was the one I tried to incorporate because it was the one with which I had done the most work and made the most sense to me. Perhaps some of the difficulty arose from the fact that all my years of teaching experience made it difficult for me to break out of pre-established routines. I had reached a point in my career where I no longer designed deliberate lesson plans.

> I have decided that when a class comes in what the topic is and have an idea about where we should end up and will also have some thoughts about the different activities we could do--but sometimes I have no idea about what we're going to do until we do it. (Journal, January 20)

However, I found that some types of learners were left out unless I deliberately planned lessons appealing to Gregorc's (1979) four learning styles.

> So I'll be teaching a lesson and be thinking, "Whoops, I haven't done anything for the sequential students in the class--better do something here!" And then something gets tacked in on the end. (Journal, January 20)

Definitely some changes had to occur as this type of approach was simply not meeting the needs of my students.

The Single Approach

I began to design lesson plans to meet my students' learning styles by varying my teaching techniques. All students would still address the same objectives at the same time, but I would lead them through different types of learning experiences. For example, when I was teaching verbs before the mid-term exams in January, what the students did was imagine the activity of class changed in the halls, generate a list of action verbs describing what they saw, choose five verbs and use them in short sentences, and put these sentences on the board, underlining the verbs. I felt this allowed the students to go from random to sequential activities. The following day's activities went from sequential to random activities in which the students generated their own list of verbs, put them in short sentences, chose a partner, and acted them out. After this activity, students completed a very sequential worksheet underlining verbs in sentences. Students were given a variety of approaches they could use when trying to figure out if a word was a verb or not. They could apply the definition (AS), visualize the sentences and apply the definition (CS), or imagine acting out the sentence (AR/CR). At this point, then, I was trying to vary my teaching approaches for all students to teach a single concept.

The Multiple Approach

The Single Approach was still primarily teacher-directed and because I wanted my students to experience making choices, my focus for planning a mythology unit changed. After reading two different versions of the Creation myth, students were given five options from which to choose, all relating to the same objective of summarizing the myth. The choices were to answer questions (CS), complete a family tree (S), write a summary (AS), illustrate the main characters and write about them (AR), or to take the main events from the myth and present them in cartoon form (CR).

In addition to choosing their assignment, students were also allowed to choose whether or not they wanted to work with a partner. After completing the project, students were asked to complete a Project Response Sheet on which they answered questions concerning what they found easy and difficult in completing the assignment. It was my belief that if students chose to complete a particular type of assignment, and then consciously reflected on that choice, they would come to a better understanding of their strengths and weaknesses as learners. For example, they may learn they are better at completing structured or sequential types of assignments like completing a family tree rather than an unstructured random assignment like illustrate the main characters and write about them.

It quickly became apparent that my planning had failed to take a critical issue into account.

> The project work with the grade 7's has been a real mixture of up's and down's. In planning the choices for the creation myth, I have succumbed to a basic (and I think fatal) error. In planning the choices, I depended upon my students teaching themselves the skills of summarizing. Some students can do this--and some cannot . . . . Sure the choices they make may be consistent with their learning styles, but

> they still may not know how to do them. (Journal, February 13 and 14)

This notion was borne out by my students themselves in their Project Response Sheets. In responding to the question "What aspects of the project did you find difficult to do? Why?", some of them replied:

> I found the summarization (sic) hard because I didn't know how to summarize (sic) the story. -Wendy
>
> Writing the summery (sic) because I'm a pour (sic) righter (sic) and making this summary makes sense (sic). - Judy
>
> To do a summary on the story there was a lot (sic) to write and it was hard to choose the right information. - Diana
>
> The part (where) we had to do a summary because in elementary we didn't have much work on it. - Cathy
>
> Figuring out what to draw and what they should say. - Trevor

These reflections led me to realize whereas I was not satisfied for planning solely for total whole group instruction, neither was this more independent study style of approach going to work either. I needed to find a different way to plan.

The Combination Approach

This third approach to planning combined aspects of the previous two. I believed that sometimes the students needed to be taught skills as a large group and that sometimes they could be allowed to do project work. In my planning, I strove for a balance between these two approaches by teaching a skill like summarization to the entire class. The skill would be presented in a number of different ways to appeal to the learning styles of the whole group. Students could then opt for choices incorporating this skill in a more independent study type of project.

> I know that at some point during the year, I need to teach quotation marks. So what I'm doing now is teaching this a number of different ways to appeal to different learning styles and then relating it (sic) to a project incorporating mythology--and then letting them choose their topic, environment, to work alone or with a group-style of presentation. (Journal, March 15)

Using this approach, I felt that my students could still meet the requirements of the mandated language arts curriculum, but could experience this curriculum in different ways.

Mandated Objectives

The planning process had to be modified once again when I discovered that not all language arts objectives as mandated by Alberta Education were conducive to this type of project approach. For example, as stated in the curriculum guide, students need to learn how to write description, so therefore, I could not take this objective and have students express it in any presentational form other than writing. A random topic like inventing your own monster and a more sequential topic like describe your favorite god/goddess from myths you have read as well as a choice of environments in which to work accounted for learning style preferences with this assignment. My principal reminded me of this when he said:

> You've got to teach them the basics. And the curriculum says that these kids should be able to write this and this expository paragraph. Regardless of whether or not you want to be super conscious of individual differences, you still have to say there is a basic standard. (David, February 20)

Time Constraints

Concerns with the mandated curriculum emerged in another aspect of lesson planning. Because project work turned out to be incredibly time consuming, I became concerned about whether or not I would be able to teach all the objectives from the curriculum guide. This led me to utilize more large group instruction.

> We simply do not have the time to pause leisurely on every myth to do project work . . . . But yet as a teacher, I want to try to give my students a fairly good grounding of mythology. Here's where the McCarthy type technique comes in. What I do is present a myth in a number of different ways and have students do a number of things with it quickly and then more into the next. By doing this I feel better because my students are being exposed to a number of different myths as well as to a number of different teaching strategies and techniques. (Journal, April 9)

For example, we read the Orpheus myth orally and silently. Students were asked about images they had seen or emotions they had felt during the reading. They then broke into their own areas to work on the questions--some very sequential and some random. Planning became a matter of juggling the learning styles of my students with the content of the curriculum guide while keeping an eye on the passing of time.

Resources

Successful planning requires a certain amount of organization and with this, I was continually frustrated. I found that some of the time I was not leaving myself enough time to properly plan lessons, assignments, and tests. At the beginning I further handicapped myself by showing a disdain for pre-packaged materials, believing they could not be incorporated into a learning styles approach to teaching. Consequently, much of my time was spent not only designing lessons but all the materials as well. By the time we got to the Mythology Unit, I began to make use of some of the questions that came after each myth in the student text and in some cases actually included them as one of the options students could choose. Very little time was devoted to a Mystery Unit at the end of the year, and with this unit, I came to the realization that I could take an existing unit from the language arts series and adapt it for my purposes. Teaching ideas could be added or deleted as necessary to provide for a more balanced lesson. Because my energy levels began to run low in June, I found I began to rely on the prepackaged lessons too much.

> One problem that I am experiencing with my choice of going with a prepackaged unit is that I am tending to be a bit lazy with respect to planning --it's just so easy with everything laid out--but lately, I find that I am not really reaching all learning styles and perhaps am not doing as much as I should. I also find that I am not enjoying it as much as I did before. I keep thinking that Rita Dunn and Gregorc/Butler have said that this process of applying learning style theory takes a long time, and I guess I concur with them. I mean that I am applying it in some way all the time, but certainly more intensely at some times than at others. (Journal, June 2)

Style Flex

In addition to making students aware of their learning preferences, I wanted students to stretch themselves by trying to complete activities that required the use of a nondominant style. For example, if a student always completed very sequential activities like drawing a plot diagram, I wanted him/her to try something more random like rewriting this myth in the form of a play. I believed that by doing this, students would be more flexible learners and might uncover previously unknown strengths.

I planned for style flex in a number of ways. By teaching all students the same skill in a number of different ways, teaching style and student learning style would be matched at times and mismatched at others for each individual student. By sharing student work through display and presentation, I wanted to expose students to different types of assignments and the strategies needed to complete them. I hoped this might encourage students to engage in risk taking and try something new. I actively promoted style flex on the last project the students did by having them reflect on the different choices they had made with respect to project work and then try something new.

Shared Objectives

Planning lessons that incorporate a great amount of choice can be a confusing activity. Consciously referring back to the curricular objectives I had for a lesson, project, or unit helped to keep me aware of what I was trying to accomplish. "It was a good idea to plan out the general objectives for the unit because it is helping to keep me on track" (Journal, p. 38). These unit objectives had been shared with the students. Objectives were also stated at the beginning of each class period.

Conclusion

Lesson and unit planning emerged as being very important in my attempt to address the different student learning styles in my classroom. Unless I consciously planned to teach equally to all four styles, some would be neglected. A lesson plan is only a projection of the future. How these plans operated in practice is the focus of the next section.

Lesson-as-Taught

Lighting

Making a choice, taking responsibility for it, and reflecting upon it was the method by which I incorporated environmental changes in my classroom. I wanted my students to decide where the best place was for them to sit rather than me allocating them spots according to my seating plan. When I first had the lights dimmed in my room, I explained to the class

> that I had been doing some reading about how people prefer different types of lighting when they work --mentioned that I wanted to check this out by experimenting--showed them which area of the room they should sit in depending on their preferences. (Journal, January 20)

Students were then allowed to choose where they wished to sit but they had to remain in their chosen spot for two weeks before I would allow them to move. I felt this was adequate time for them to evaluate their choice. At the end of the two week period, some students chose to move again, but many remained where they were.

Groupings

Success with the changes in lighting was the impetus for another environmental change. When an assignment was given, I wanted to allow some students to work with others. Groups were, therefore, allowed to sit at the front of the room and students who preferred to work alone sat at the back. During whole class instruction, students still sat in their more traditional rows.

In addition to acknowledging that some students work best with others, I was also trying to allow for a variety of noise level in the room. The noisier section was up at the front with the groups, and the quieter section was at the back with the students working alone. Students were not locked into their choices with respect to groupings. They were allowed to change them on an assignment basis. I always encouraged them to reflect upon choices they made in the past in determining what would work best for them.

Reliance on Lesson Plans

My attention now turned toward designing lesson plans that appealed to Gregorc's (1984) four learning styles Concrete Sequential, Abstract Sequential, Abstract Random, and Concrete Random. When I first began to teach trying to accommodate their learning styles, the lesson plans I had developed assumed a great deal of importance. I was afraid that unless I paid close attention to my lesson plan, some activities designed to appeal to specific learning styles would be omitted. It was almost like learning to teach all over again.

> Sometimes I almost felt like a student teacher who is concerned about the "plan" that they're not watching the students for any type of feedback. Like the student teacher, I also need to learn that it's okay to deviate from my learning styles "plan"--but I also think that just like a student teacher internalizes their (sic) lesson plan and what it means to be a teacher, so will I internalize my learning style plans and what they mean. (Journal, January 21)

Teaching during this stage felt forced and unnatural. The lesson plan dictated classroom activity and became the focal point of the interaction between the students and myself.

Class Reaction

At this point the students were working on activities that were totally teacher-designed and teacher-directed. In teaching verbs before the mid-term exams I tried to address my students' learning styles by using Butler's (1984) Single Approach. Students then broke themselves into groups to answer questions. While it is true that students were working on both random and sequential questions, all students had to complete all questions. The only choices involved were with respect to lighting and seating arrangements. The students appeared to respond well to this approach.

> Again, they (7-C) moved their desks quickly into place and got right down to writing. Sometimes the groups would be extremely quiet--sometimes one or two of them would be chatting quietly. But from what I was able to determine, they were chatting about their assignments. (Journal, January 23)

Dividers

Students could work individually or in groups on assignments under dim, medium, or bright light. Some areas of the room were noisier than others. According to Dunn and Dunn (1984), some students need a certain amount of privacy when they work. In order to accomplish this, I obtained three dividers that the art department used for displaying student work during parent evenings. These were placed across the back of my room. Students who needed a great amount of privacy were allowed to move their desks and sit behind them. The dividers were used more or less constantly by students needing privacy throughout the year whenever possible. Some students who needed privacy, however, later chose to go to the library carrel area.

Mythology Project #1

With Mythology Project #1, a great many more choices were opened up. Not only could the students decide where they wanted to sit and with whom, they could also decide which assignment they wanted to complete from a choice of four.

I talked to students about what was involved in completing the four choices and the evaluation criteria for each. For example, with the family tree, we discussed how to look up information and arrange it appropriately. Students understood the family relationships of the gods and goddesses had to be accurate and the work displayed neatly and attractively. I thought that just as they seemed to find appropriate places to work in the classroom, students would also naturally gravitate to an assignment consistent with their learning style. Some students had difficulty with this. One group of boys was particularly disruptive.

> I'm thinking about Ryan, Roy, Jason, Trevor, and Jasbir. On Thursday afternoon, I gave them the full 50 minutes to work on the project--and those students did practically nothing. They sat together in a group and did nothing but disturb each other. (Journal, February 13 and 14)

A group of girls who were honors students were having difficulty with all the choices. They had difficulty settling down to work and there was much giggling and chatting. One observer noted:

> There seemed to be that strange mixture--physically very mature, emotionally and psychologically still

> seemed to be very, very young. (Michael, February 13, p. 15)

Individual student behavior was also off task.

> Jason with the Motley Crue t-shirt was holding a pencil and he took a ruler and just severed the pencil in half. (Michael, February 13, p. 8)

> Edward was being a little jerk. He really was. He was doing some of the silliest things. (Michael, February 13, p. 13)

Some of the students responded very well to all the choices and were able to get their work done.

> Shane worked so quietly and so well behind a screen I forgot he was there--most of the students got a lot done--but boy, did they ever ask a lot of questions. (Journal, February 13 and 14)

These were questions that asked for my evaluative comments on how I thought they were doing. What did I think of their lettering on the family tree? Did this drawing of Zeus really look like him? Was this a good concluding sentence? I called these comfort questions. My time was totally consumed by disciplining unruly students and by answering the comfort questions asked by students unsure of their progress and needing reassurance.

Responsibility

I was asking students to take a certain amount of responsibility for their learning by having them choose their assignments and environment in which to work. One observer said:

> I can see where it would take time to have kids understand that. Any kids, but kids coming into Grade 7 who are leaving another whole structure behind to come to a new one, that would be a real learning procedure--to learn how to work alone, to work on task, to make the choices. (Carole, June 5, p. 13)

Because I believed that some of the class was not handling the concept of choice very well, I explained to my students that with choice came responsibility. If they wished to work in a quiet area that was permitted, but that meant they couldn't be noisy and interfere with other students who also needed a quiet environment. Working in a group situation was allowed as long as that group remained on task. I was trying to get students to understand that once they had made a choice concerning where and with whom to work that was their choice, they had made it, and that that choice was never an excuse for misbehavior.

> I think that one error I committed was in putting too much faith in the theories. I mean I assumed that if I let students move around the room into spaces that they would do it cooperatively because they were going to a space where they wanted to be. Wrong in some cases. And also because they were completing an assignment they had chosen, they would always be on task--Wrong again. What I've had to do is point out that the choices I've built into the environment are there to make the room a better place for them to be. That the dividers are there because some people need privacy--therefore if students are behind them they're not to be disturbed by others, etc. I have been constantly pointing out to my classes that we have to respect everybody's rights and choices . . . . What was missing before with what I was doing is that it was a kind of free-for-all . . . . They are now starting to respect each other with guidance from me. (Journal, March 3)

Project Response Sheets

Guidance from me was also required in another area. I believed that some students in the class honestly did not know what they were good at doing.

> Trevor is sort of in never-never land. He's like a fish out of water. He doesn't know, just from initial impressions, he doesn't seem to know who he is. He doesn't seem to know where he belongs or where he doesn't belong. So you can't really blame the kid or expect the kid to all of a sudden be on task because he doesn't know who the heck he is. (Michael, February 13, p. 9)

> Lai struck me as someone who, you know, maybe I'm perceiving it wrong, but this whole thing of choice is so new to him that I honestly think he can't work with choice. (Michael, February 13, p. 12)

To help students work with choice, I created Project Response Sheets which asked the students to reflect upon the choices they had made in the project just completed. Specifically, they were asked which project they chose to do and why as well as what aspects of the project they found easy and difficult. In addition after Project #4, students were also asked to rate themselves by giving a mark out of one hundred and estimate the amount of time to complete a project. I believed that if students were asked to consciously and critically reflect upon both the positive and negative aspects of choices they had made, they might come to a better understanding of their strengths and weaknesses.

Structure

Structure was a third area I tried to focus on with the class. Lessons in which the students were not involved in project work became fairly structured. The class was still taken through all the different teaching/learning styles I had planned, but rather than having twenty or thirty minutes to work on an activity, the steps were broken down into discrete units. Time was also broken down into discrete units of two minutes to complete this, three minutes to complete that.

> I started off by having the students focus in on Zeus--and had them write what they thought Zeus was like as a person--they then wrote (jotted quickly) what they thought he looked like (could also sketch this) and finally I had them write what they thought his voice sounded like. We then created a scenario where Zeus and several other gods and goddesses are sitting around a banquet room after a meal when Hermes comes dashing in to announce that Prometheus has just stolen fire. I had them jot down quickly what Zeus might say--then they wrote what Athena might say in response--and finally what Zeus might say in response. They then shared these mini-dialogues with a partner. (Journal, March 13)

My reasons for doing this were two-fold. I was trying to teach students how to complete different types of questions.

> "What do you think he is like as a person? What do you imagine he looks like?" This is all playing with right brain stuff. And then you went to left brain when you said, I think, "Dinner with Zeus--who's at the table with him?" And they had to give you actual facts . . . . Saw lots of the three modalities. (Christina, March 13, pp. 1-2)

Secondly, because some of the students seemed unable to concentrate for very long periods of time, I thought a small defined task in a short period of time was appropriate for the class.

By mid-March and Project #2, some students still seemed to be at a loss.

> Paul had a difficulty with the first task you said--describe Hades. He said, "I don't even know who Hades is," and that was a cop out. That was not the truth. (Christina, March 13, p. 6)

> Roy. Yack, yack, yack, yack all the time. (Christina, March 13, p. 8)

> (With 7-C) you had to use way more management techniques, low key all the time. (Christina, March 13, p. 8)

But the majority of students seemed to be responding well.

> Some kids said, "Well, I don't really know what I want to do," or "I don't know how I am going to handle it" or whatever and then through conversation, I tried to bring them around. But open and seemed really excited to do what you asked them to do. There was no begrudging, there like--oh this is another assignment. (Christina, March 13, p. 7)

New Environmental Options

My room had become too small to incorporate all the environmental choices I wanted to create. Accounting for differences in lighting was simple, but allowing for differences in noise level was not feasible. If some students were talking in groups at the front of the room, this noise

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filtered to the back more quiet section of the room. I decided to allow students who wished to work alone to go across the hall to the library. Groups remained in my room.

Some project choices like plays meant that students needed rehearsal spaces. This led to the use of a book storage room, audio-visual storage room, library office, and drama room when available.

Gradually, students began to be more comfortable with the concept of choice; began to know what their learning preferences were, began to take more responsibility for their actions.

> I had students in my room, in the book room, the drama room, the equipment room, the art room and the library . . . . I must admit I had reservations about letting Dan, Roy, and Lai and the others go to the drama room, but I walked in twice and they were working, really working--and at the end of class showed me, because they wanted to, what they had accomplished. (Journal, March 15)

Goal Setting

Because 7-C seemed to becoming more responsible, I decided to now allow them to work on projects for several consecutive class periods. Previously assignments had been of the duration of single periods. Goal-setting was introduced to the students as a methodology by which students could organize their time and the amount of work they had to accomplish.

> I said all right. You know how many days you've got left before this project is due. You know how much class time I'm giving you. You're all at different places and spaces with your project work. Figure out how much you've got left to do and set some realistic goals for this class period. What do you want to do? And I said that even if you're working in a group, do this independently, and when you get together in your group, that's your first task to discuss the goals. (Carole, June 5, p. 13)

At the end of each class, students evaluated whether or not their goals had been achieved. By knowing how much time they had left and how much work they needed to accomplish, students decided whether or not they needed homework.

> You never said, "Now tonight you're going to do an outline, and I'm going to look at it tomorrow, and then you can continue on this." . . . But you know darn well that eighty percent of them maybe even a hundred percent of them, I don't know, are going to go home tonight and think about this and work on this. (Christina, March 13, p. 7)

Comfort Questions

By the beginning of March, I decided that it was time to put all the "comfort questions," questions of a totally evaluative nature to an end. Students had to learn to rely on their own judgments regarding the worth of their work.

> What I've done, and this is all it took, was to say to the students that my job was not, in effect, to do assignments for them by always offering my suggestions because then, I would end up marking my own stuff. Instead I told them that questions relating to how (focus on process) were fair game, but just "What do you think?" questions were not (product). They seemed to really accept this and I haven't had any problems since. (Journal, March 3)

This really freed my time to work with students individually or in groups on how to complete assignments.

A Typical Project Class

My role as a teacher changed considerably the six-month period this study encompassed. Previously classroom activities had been almost completely teacher-designed and directed. This power had slowly been shifted over to the students. There were still parameters within which the students had to function; project work had to match the objectives I had set; student misbehavior in an alternative area of the school resulted in that student's immediate return to my room; and project deadlines had to be met.

> It is so hard to describe what my days are like when my students are on project work. I walk into the library hoping that everyone is working--believing that I can trust my students--but always dreading that maybe chaos is going on--and everyone is always in their place working away. I enter the AV room and students look up surprised to see me there. Bits of projects are scattered about, students are sitting on tables, on chairs, and cross-legged on the floor. I enter and immediately feel very much the interloper and the intruder. I ask students if they need anything, have a look at what they're doing, their surprised faces as I entered always registering on my mind--I am very conscious that I have broken their concentration. I quickly make my exit knowing that this is a group of students who are in control of their own learning--who don't need me to tell them what to do. And this scene is repeated in the book room, the drama room, the space in the hall, and in my classroom. The beginning of my classes consists of reminding students of how much time is left; taking polls on how far along they are; seeing if there are any major concerns with which we need to deal; perhaps doing some goal-

> setting; reminding them of what time to be back before the end of the period; and saying, " Okay, find a space." The next few minutes are usually a flurry of activity as I open up rooms; watch students get supplies and equipment; get them or show them where they can get supplies I don't have; and then everything settles down . . . . Towards the end of the class, I circulate around the various places reminding students to watch the clock. About two or three minutes before the class ends, they begin trooping in individually and in groups with posters, paper, props, books, notepads, scissors, glue, stuffed in their hands. Materials are stowed away, excited chatter, the bell rings, the students leave, and I have three minutes before the next class comes in ready to begin the whole process once again. If I have time, I once again remind the students about how much time is left, and tell them that they need to decide if they need homework tonight or not. (Journal, May 6)

My experience, then, was when the students were completing project work, they had reached the point where they could make choices and be responsible for them. My role became one of manager, facilitator, and tutor.

Large Group Instruction

Over the six month span of this study, the students completed five projects. The classtime needed for each project varied from two to six class periods. This took approximately one month. The rest of the time was spent in more conventional large group instruction which still took learning styles into consideration. I also still incorporated all the environmental choices. For example during the reading of a short story, the students made effective use of the environment.

> Tour with me after things settled down. We'll begin with my room. Laura and Wendy are sitting on the green chairs in the back left-hand corner of my room with their feet up reading softly to each other. Cynthia and Diana who had originally been in the library came back to my room because they said the library was too quiet for them to read to each other. They are now sitting behind dividers in my room reading softly to each other. Robert and Andrew are sitting in their regular desks and places reading silently. When Cynthia and Diana return from the library, Ryan jumps up and helps them manoeuvre a screen carefully into place. Peter and Ryan are now sitting together but are reading silently. When I first announced to the kids "to find a space" in which to read, Judy looked up at me with a questioning look as much as if to say, "Can I work in the hall?" All I had to do was to nod to her, and she knew that she had received approval to work there. We will now journey to the library. Dan and Roy are reading in the AV Room, and a quick but apprehensive (sic) on my part listen at the door confirms that they are indeed reading. Meggan is sitting alone at the end of one table biting her fingernails as she reads. Karen is sitting with her feet up beside Cathy at another table. Even though they are sitting together, they are reading silently. Jason is sitting up at the front table reading. Several of my students are sitting on the floor behind the stacks. Lai is sitting with his legs straight out in front of him. Edward sits slumped in a small corner provided by a bookshelf . . . Duane sits with his legs straight out. Even though all these students are sitting together, they are all reading silently. Le, Stephanie, Paul, and Jasbir are all sitting in straight back chairs at the carrels reading silently. Meanwhile Ryan and Peter continue to be a bit of a problem back in my room. I end up taking a ruler away from Ryan because he's poking Peter with it. They decide to move behind a screen and read to each other. I end up having to move them back out because they are laughing and talking. Now they are working by themselves with no feelings of bitterness towards me; they know they didn't live up to their obligations. (Journal, May 13)

After reading the story, the students were to take its main events and turn them into an article for publication in a magazine of their choice. They could also choose an environment in which to work. Students had to each complete their own assignment, which was out of twenty-five marks. Projects had generally been worth one hundred marks. I had not intended this assignment to be as involved as project work, but the students interpreted it differently.

> 7-C continued with the newspaper article that (it) managed to turn into a project. Construction paper, title pages, felts, pencil crayons, stencils, news magazine cutouts, excited chatter, concern over the layouts still permeates everything. (Journal, May 20)

Some classes still had me directing all students to the completion of the same activity. For example, when I introduced Mythology Project #5 to the class, I wanted them to attempt a choice that involved them using a nondominant style. The first twenty-five minutes of the class was spent with me asking students to reflect upon choices they had made in the past and to choose something new. Rather than relying heavily on my lesson plans, I had now reached a point where teaching felt natural.

> Your teaching style is absolutely and utterly relaxed. And I don't mean nonstandard, or non-demanding. I mean you are just so with them and yet so totally task-oriented while you're with them. You don't fool around, you don't let them get off task. You're teaching every minute but in a totally relaxed way. (Carole, June 5, p. 2)

Conclusions

Lesson-As-Taught evolved from being totally teacher-directed to more student-directed. Some students still seemed to be struggling with the concept of choice, but most students had accepted much responsibility for their learning. The curriculum guide was still the basis for lesson and unit planning, but the students had some choice with how they chose to experience it.

> You've still got to look at the curriculum which you can't ignore . . . everybody has to experience the same curriculum . . . but at the same time I think it is how people experience that curriculum. (Michael, April 30, p. 12)

Lesson-as-Evaluated

Risk-Taking

Trying to incorporate learning style theory into my teaching entailed a certain amount of risk. What if the theory fails; What if I fail and can't manage to teach in new ways; If this does work, what does it say about how I taught before are all questions that come to mind from time to time. Not since my student teaching experience nine years earlier had I deliberately placed myself in such a state of risk as when I tried to refocus my teaching practice and classroom environment according to selected learning style theory concepts.

In order for a teacher to take such a calculated risk, there must be a great deal of commitment to the ideas guiding change. A great deal of myself was invested in trying to understand the theories and translate them into practice. Late night and weekend reading/planning sessions became commonplace similar to my first year of teaching. Familiarity with the course content combined with a positive student response to my teaching led to a tapering off of these activities in my more senior teaching years. Because I was changing the focus on my teaching not only was I putting myself in a state of risk but my students as well. Therefore, it became critical to constantly evaluate my teaching in as many ways as possible.

Knowledgeable Observers

Sources of evaluation were many. David, my principal, was the only staff member who knew anything about learning style theory yet I really felt I needed the evaluation of people who did not have a vested interest in what I was doing. Knowledgeable observers from outside the school were, therefore, invited into my class at selected times for the purpose of observation and evaluation. These times were chosen carefully by myself.

Michael

Michael, a university colleague, observed the first class, 7-C, working on Mythology Project #1. This class did not go well even though from a learning styles perspective, it was planned appropriately. I was not yet sure of my role and spent the whole period running and answering questions. The students were not yet sure of their roles and some of them misbehaved and accomplished little. I felt very discouraged about the way the class had responded to the assignment. "I do know that after Thursday I was so tired, frustrated, and angry that, for a while, I felt like dumping the whole thing" (Journal, February 13 and 14).

Michael helped me evaluate what had gone wrong with the lesson and why. He pointed out that the beginning stages of a new program can be difficult for both the teacher and student. "And by breaking new territory, it's a very slow process--and I'm sure frustrating as heck for you" (Michael, February 13, p. 3). He acknowledged that 7-C had some students in it who were difficult to teach.

> Nancy: I can teach them (7-C) so that they are all sitting in desks, and yeah that particular little group will be quiet because everybody else is, but that's not the answer either.

> Michael: No, it's not the answer. It's really hard to deal with that group. (Michael, February 13, p. 10)

Michael had noticed that one-on-one teaching of structure seemed to help with Trevor, and this observation led to planning an alternative approach to be used with 7-C.

> Michael: Perhaps because of the immaturity, now I don't know--I'm just shooting ideas off you--perhaps what they need is a lot more structure (Michael, February 13, p. 8)
>
> Nancy: Perhaps one thing I could do with 7-C is--I think the choices are important because without them, the kids aren't going to grow until they get comfortable with the concept of choice, but make it more guided choices with them. Perhaps not as many.
>
> Michael: Perhaps, yes. Perhaps even something that looks fairly structured. Maybe make the choices there but having more structure within the choices. (Michael, February 13, p. 16)

Michael's evaluation and our subsequent discussion gave me the impetus to continue.

David

A week after Michael's visit, I asked David, my principal, for his evaluation of my classroom. "One of the things that is obvious as soon as you walk in there, your classroom is incredibly visual and is very much alive" (David, p. 1). He acknowledged the differences in lighting, creation of formal and informal work spaces, displays of student work, and mobility of the students to leave this environment and work elsewhere in the school. David also recognized the limitations within which I was working.

> Actually excellent in the sense that you're definitely working in a "regular" school with a regular sized classroom in this case in an inside classroom without the ability to open windows and get some temperature variation. So there are a number of limits and handicaps you are working. If you could think of any things that we could do that are reasonably inexpensive (David, February 20)

David's positive comments coming so quickly after the negative experience with 7-C gave me the confidence to keep trying to work with learning style theory.

Christina

When you live on a daily basis with the changes you have made as a teacher, it can be difficult to evaluate whether or not a change has actually occurred. New strategies and environments can quickly become second nature. "Sometimes I really worry that I'm not really doing anything with the theories, but I guess I also know this is not the case" (Journal, March 15). I asked Christina, who had observed many junior high classrooms in her role as a teacher effectiveness consultant whether or not what I was doing was really all that different from other junior high teachers.

> Nancy: Do my kids seem different to you from other kids that you see?
>
> Christina: From what I am seeing, yes--from what I know, kids are kids. Like everybody can do this. So maybe, and I don't know

> that this answers your question, but the teachers are different. I don't think the kids are different. And what they are doing is different because of the teacher okay because the teacher is the focal point in this whole thing. (Christina, March 13, p. 7)

Specifically, Christina observed students involved in a number of different activities.

> Most junior high classrooms I have been in have to be very structured or teachers feel they have to be very structured and thirty kids are doing thirty worksheets for thirty minutes because then they have control. (Christina, March 13, p. 1)

Christina believed that many of my activities patterned the ideas of the Dunns (1984), Swassing and Barbe (1979), and Gregorc (1984), but that my teaching had a strong teacher effectiveness base to it. This opened up a possibility I had not previously considered.

> I mean if you want to talk teacher effectiveness, you had set, you had active participation, you had modelling, you gave them examples on how to do it, like all that was in there too. And then overlaid, like if you had to make an overhead transparency, overlaid on top of all that was all this neat stuff on learning styles. (Christina, March 13, p. 8)

My role seemed to be much better established and more clearly defined since the time of Michael's observation.

I also asked Christina to evaluate how my students were responding to my teaching strategies. I felt that my students were learning but needed external verification of this. Christina was favorably impressed with what she observed.

> It was like play, like it was fun, it wasn't a work period--and the amount of knowledge they were going through was amazing. (Christina, March 13, p. 9)

> And when they had to do their radio play or whatever, they were doing, they were looking through their notes, and they were studying, but they didn't know they were studying. It was neat. (Christina, March 13, p. 2)

Michael

Secure in the knowledge that both my students and I had more control of the situation, that we were guiding the theory rather than the theory guiding us, I asked Michael to observe another class at the end of April.

Had the theory changed over time and had the students changed over time were questions with which I was interested. On his second classroom visitation, Michael was surprised by the progress 7-C had made.

> I can see a tremendous amount of progress with 7-C. I expected to see Trevor and Ryan fooling around, and when I saw the two of them work for just about the full period, I mean that just about knocked my socks off (Michael, April 30, p. 3)

Michael also commented that the students seemed to have a "greater sense of knowing" about the ways they liked to work.

> What I am starting to see more and more is kids knowing how they function. Some of the choices they made were obviously based on things that worked for them. (Michael, April 30, p. 4)

Trevor and Ryan really seemed to have improved.

> What I's seeing is a greater of sense of knowing. This is the way I like to work. This is what I am going to set out to do . . . . Well, even Trevor was displaying enthusiasm. And the other guy [Ryan] was genuinely excited. Now compared to last time

> all they did was muck about. (Michael, April 30, p. 1)

The group of girls Michael had thought quite immature previously now got down to work immediately.

> Some of the girls in this last class were right in. I mean a lot of the girls working individually. The minute you said, "Go to work," bam it was there. There was none of this I wonder what I should do. I wonder where I'm coming from. (Michael, April 30, p. 2)

These observations confirmed for me that the free-for-all environment from before had disappeared and a more self-directed, studious one had emerged to take its place. This led to more planning in which Michael and I believed the students were now ready to deliberately flex into a nondominant style.

Carole

On Mythology Project #5 in the beginning of June, I asked Carole, a university drama professor, to observe 7-C. For this project I wanted students to reflect upon choices they had made in the past and then try something new. I believed that most of my students knew what they were good at doing, and wanted them to gain the knowledge that comes from a new experience. It was my belief that Carole's observations of and thoughts about the students as they went through the process would be valuable.

> I was thrilled with the way you drew out from them the choices they had made this year. Did it through

> brainstorming, did it with the involvement of two kids at the board gathering their ideas from them, did it with the idea of volunteers with those two who had energy to burn, and then using the list they had just drawn up to make evaluation statements about their own year. That's a synthesis. They really synthesized their mode of operation for the entire year. (Carole, June 5, p. 4)

One of my major goals for the year was to create an environment where it may be possible for students to become aware of their strengths and weaknesses as learners while experiencing the language arts curriculum as mandated by Alberta Education. As a teacher, I felt I could not give my students the knowledge of how they learned best but hoped that by having students experience first-hand a number of different learning styles on a regular basis, by encouraging them to try a new type of assignment, and by having them consciously and deliberately reflect upon their learning experiences they may arrive at this knowledge themselves. And as a teacher, I knew that I could only do this by having the students experience the language arts curriculum as prescribed by Alberta Education. Carole felt that I had accomplished this goal at least in part.

> The fact that they are not learning only specific content in your questions about the story they had read the day before and the use of foreshadowing and the listening for clues in the two minute mysteries, all of that is proof to me that they are certainly learning content, but you free them so when you say did you like it or didn't you like it because that's okay because we have different choices in life and different values and different opinions. You are freeing them to speak what is the truth about their attitudes at the same time

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> you are helping them to shape flexibility about those attitudes. (Carole, June 5, p. 5)

In addition to being able to evaluate what they were good at doing, Carole also noticed that my students had respect of and appreciation for each other's work, a lesson I was hoping they would learn. I believed that along with self-knowledge went respect for other approaches.

> When a kid gives an answer to you, you listen all the way through to the end and verify it before you move on. And you stop anyone who's going to disagree with that until the child has been given the chance to give the entire answer. And that is so lacking in so many classrooms. And the kids know that because they appreciate each other's work and answers. (Carole, June 5, p. 5)

As sources of evaluation, the knowledgeable observers were critical. They confirmed they witnessed learning style theory in operation, confirmed my beliefs about the importance of the theory, and confirmed student self-knowledge, respect, and tolerance were a part of the experience.

> Nancy: It's important for me to have people come out because I'm in it everyday, and you know me--like I'm always self-doubting and things like that.
>
> Michael: Yeah, and rightfully so because self-doubting is misconstrued for critical reflection. (Michael, April 30, p. 16)

Students

Critical observation and reflection of the students themselves also helped me evaluate my lessons. References to how much of the prescribed language arts content students were learning were frequent in my journal. Incorporating a variety of teaching strategies into the teaching of grammar seemed to help the students. In January I discovered that 7-C did quite poorly on a test on verbs when they had been taught only one way but did much better when I retaught the same concept using a variety of teaching techniques designed to appeal to different learning styles.

> I retested my grade 7's . . . on verbs today, and boy what an improvement! 90% of their marks went up (in some cases a lot). This could simply be due to the whole reteaching procedure, but I honestly believe that if I had retaught verbs the same way (very sequentially), the results would not have been as dramatic. (Journal, January 28, p. 28)

Evaluating the project work was rather complex and entailed quite a bit of marking. Not only would I evaluate how well the students had achieved the objectives for the project, but I also marked the presentational style (question, summary, chart, story, play, etc.) they had chosen. Criteria for marking was given when the project was assigned to the class. Completed work was displayed in my room so students could see how others had approached various types of assignments.

The majority of student marks on the projects tended to be higher than the marks I was used to giving. In my eyes the students had displayed knowledge of specific objectives while paying respect to the presentational medium. Some students like Ryan and Trevor were still trying to find their way, but most of the class was putting a great deal of effort into the completion of their assignments. "Nobody was bucking you or saying, "No, I don't want to do this," or "I can't do this" (Christina, March 13, p. 6).

Not only did the students seem to be working hard, it was also the first time in my teaching career that I consistently had all my students handing in all of their assignments. This seemed to me to be an indication that they were really getting involved with their work. This notion was furthered by an examination of the Student Response Sheets On Mythology Project #5. Students were given approximately four hours of class time to complete the assignment. When asked to answer how many hours they spent on the assignment, only one student reported four hours. Several reported needing six to seven hours and many more as much as ten to thirteen hours.

Hours alone spent on an assignment does not necessarily make for quality work. When students were asked to evaluate their own work, they gave some interesting and honest responses.

> 85/100 I put a lot (sic) of effort into it so I feel that I should get a high mark. -Robert

> I think we would get 75/100 on our skit because we put a lot of effert (sic) in it with our skript (sic) and our costumes. -Karen
>
> 75/100 just because. -Peter
>
> 75/100 because we didn't do as well as we planed (sic). -Wendy
>
> 65/100 Because it's not too good and long enought (sic). -Le

The work was of differing quality.

> I think we pointed out at one time the girl's drawing in which it was obvious she was doing such fine detailed work and right next to it a drawing that was obviously of the stick man variety. (Carole, June 5, p. 1)

This was, however, the first time in my teaching career that I had students putting so much effort in to the completion of their assignments.

Evaluating student progress through objective testing on the mythology unit was a problem. Whereas on project work I had allowed students to explore the objectives of the unit in their own diverse ways, I did not believe this was possible to do on a test. Not only would the designing of such a test be problematic, but test writing is a reality students have to face. Allowing my students to escape this reality for a year was not, I felt, in their best interests. Constructing a test that I felt had an equal number of questions appealing to the four different learning styles was difficult and challenging. And on this test students seemed to do either very well or not well at all. On the common mid-term and final exam that all grade seven students wrote, my students did quite well.

Self

How I felt about what I was doing was a third source of evaluation. Being able to help individual students who previously had been difficult to deal with was very rewarding.

> Today when I gave them (7-C) the class to write their paragraphs, he (Dan) was really having trouble getting started. I had him try the brainstorming technique, and he voluntarily set the timer on his watch and tried it--and I think it really helped him. He seemed so secure and confident once he had a strategy to get him started. And once again, I felt that I had the strategies to help him. Boy that feels good. (Journal, February 18)

Positive experiences such as these led me to view troublesome students in a new way. Finding a strength to focus on rather than always attending to misbehavior helped to create a positive environment. If I felt that what I was doing was working, I was encouraged and wanted to continue.

> And how do I feel about all this? I'll repeat an earlier comment--for the first time I really feel like I am teaching. L.S.T. (Learning Style Theory) has given me a vocabulary--a perceptual guide by which I can begin to understand my students. It's funny too--when I first began making all these changes it was stressful for me. Now I can't imagine teaching any other way. (Journal, March 9)

Timing

Evaluation was not an end point but rather, partly a pattern of planning, teaching, and evaluation. These steps did not necessarily occur in this order.

> I am beginning to realize that this process means flipping back and forth through planning, researching, experimenting, reflecting, making decisions. And it means that the process is a constant mingling and interweaving--a kind of dance--in between all these steps. (Journal, January 20)

Evaluation became an activity with which I was constantly engaged. During class time I watched and measured my students' actions to determine their progress and success or a lack of it came sometimes to be measured in learning style theory terms. On one occasion I observed Trevor being disruptive and concluded that he did not know the stylistic demands of an activity he was completing.

> When I sat down with Trevor and explained cartooning to him by saying, "Draw your first box. Decide what you want to put in it by looking back at the myth to see what comes first. Okay--let's write that down in the box. What goes in the next one? I did this with him for about 4 frames--and he worked steadily for the next 5 minutes or so--and then lost concentration again. (Journal, February 13 and 14)

In addition to observing individual student activity, I also tried to evaluate the entire class's response to a particular lesson. Realizing that 7-C class was having difficulty concentrating for a fifty minute class period led to a modification in lesson planning.

> L.s.t. (learning style theory) also fails to take into account other types of maturity. Grade 7

> students simply cannot sit and do the same thing for 50 minutes--about 40 seems to be their limit . . . . What I can do about this is reinforce guidelines, timelines, and objectives with at the beginning of the class and then pull them back together at the end for some debriefing about what they did for the period. (Journal, February 13 and 14)

This approach was, in turn, evaluated and found to be successful. It became the way classes were conducted when 7-C was involved in project work.

Theory

Evaluation led me in many directions. In addition to talking with knowledgeable observers, I found it necessary to go back to theory to find answers to problems I perceived.

> I also need to become more skilled at incorporating a variety of sequential activities--I have very few strategies in this area--this is where it is really necessary for me to go back into the theory and read Butler. (Journal, January 20)

> Listening to Gregorc's tapes has turned out to be a good thing to do. I am finding that it is necessary to delve back into theory from time to time. (Journal, April 10)

Strategies gleaned from the theorists would be incorporated into my teaching for my consideration.

I evaluated my lesson plans against the model ones developed by Butler. Journal references to theory are fairly frequent in January and February. For example, when I first began trying to plan lessons according to Butler's ideas, I felt discouraged.

> According to Butler, this means that I am only at SDI Level II--using the Variety Approach in terms of how I am applying l.s. (learning style) theory in my classroom. (Journal, January 23)

Consciously trying to transplant Butler's ideas into my classroom led to some difficulties I had with her theory.

> With Butler's approaches, however, I am experiencing a certain amount of difficulty. I do agree with her notions that most teaching begins with the Single Approach. I know I did this instinctively, but now I believe I am definitely teaching in more than one style. For example, I taught grammar in both sequential and random ways --which is basically Butler's idea of the Variety Approach . . . . So now I am having difficulty because I want to go beyond this. How to do it becomes the operational question. Here's where my problem comes in. If I go with the Multiple Approach, with simultaneously differing learning activities in all 4 styles, what then becomes the role of the teacher? Well as curriculum designer and implementer for sure, but I also believe that there is a real art to teaching. I realize that if students are working on independent projects that I am free to act as a tutor, coach, mentor, etc., but I can't be in 4 places at once when the students are first introduced to a new concept. Students can explore the myths in ways they choose, but what do I do about some of the more skills based objectives of the unit? Is this where I go back to more of a varied approach? I'm not sure. (Journal, February 10)

I then decided that what I had to do was modify Butler's ideas to meet the needs of both the students and myself.

> So I'll guess what I'll do is use it when I can, and where I can't, go with still providing students with options with respect to teaching strategies and activities. (Journal, February 10)

Even though this type of approach worked well for me, self-doubts originating from exemplary strategies in the theory would still crop up. "I keep thinking about Butler's Nirvanha level of SDI, and, according to her, I haven't reached it yet." (Journal, March 15)

In comparing the strategies I had used in incorporating environmental changes in my room against the ideas advocated by the Dunns (1984), I was pleased with what I had done.

> If I had gone with the Dunn's model, then the concept of choice has been removed from the students. They will sit in a group, etc. because that's where their L.S.I. (Learning style Inventory) says they should be. My students now sit in groups because that's where they think they should be. (Journal, March 3)

With respect to both Butler (1984) and the Dunns (1984) I believed I had successfully adapted their theories to my classroom situation.

Exploration in Journal

Evaluation also led me to a consideration of my past teaching experiences in exploring different ways of planning and teaching lessons. In doing this, I relied not so much on my practical knowledge of implementing learning style but rather on my broader experience base as a teacher. This was usually accomplished through writing in my journal. I would begin writing with a problem in mind and through the process of writing would arrive at a solution. Ideas would trigger ideas and I would wander off in seemingly diverse areas. In January, when I was still struggling with which theories to consider when, I felt that my lessons were not well enough planned. Through writing in my journal, I arrived at the conclusion that, for a time, I would only deal with the theories of Butler (1984) and Gregorc (1984).

> You know--it's funny--before I sat down to write tonight, I felt tense, anxious, and very tired--and now I feel peaceful and calm. This is a great way to work things out (for me). (Journal, January 20)

Writing gave me an avenue by which I could daily reflect upon my experiences.

Conclusions

Evaluations of my lesson-as-planned and lesson-as-taught were crucial to an understanding on how learning style theory was operating in my teaching practice. Each source of evaluation with its slightly different vantage point was important to gaining that understanding. Each piece contributed to the greater picture of teacher, students, and emergent curriculum.

Energy

Sources of Fatigue

Making the transition from a very teacher-centered classroom to one that is more student-centered can be stressful for both the teacher and the students. Michael, one of the knowledgeable observers, noticed the stress level in the room when he first observed 7-C's first class on project work.

> You know how sometimes you walk into a classroom and you can just feel the stress. Now I sensed quite a bit of it . . . . And you know rightfully so--you know these kids were being exposed to something that is so foreign to them. (Michael, February 13, pp. 13-14)

It was my experience that theoretical concepts did not transplant directly into my classroom. Ideas had to be evaluated, shaped, and evaluated again to see if they were meeting the needs of my students and myself. This process takes a great deal of energy. For example, when my students were first given the freedom to choose which assignment they would like to complete, they asked a large number of "comfort questions," questions designed to reassure them they were completing an assignment correctly. This proved to be very fatiguing: "I ran the entire period answering their questions . . . . If I have many more classes like the one I had on Thursday with 7-C, I'll burn out" (Journal, February 13 and 14). Feeling "burned out" also occurred when I first began allowing students to go to the library, audio-visual equipment room, book storage room, and other areas of the school.

> When I first began project work in a big way this part of the class (beginning) was a difficult time. I felt like I was being pulled apart--they were all clamoring for my attention and response at the same time. They were also trying to arrange for "advance bookings" of the various rooms. (Journal, May 6)

Another source of fatigue originated from the degree of involvement the students had with their work. They started to make demands on my time.

> Sometimes I find the student enthusiasm a little difficult to handle . . . I've spent every noon hour this week in the drama room. (Journal, March 20)

> These kids need me all the time around the concluding time of projects. They need me to be in the drama room tomorrow morning before school starts--at noon hour--and after school. I don't mind this once in awhile, but would find it an impossible schedule to maintain on a regular basis. I remember what happened with the last project and how burned out I began to feel. (Journal, May 5)

Poorly planned or received lessons were a third source of fatigue. I felt very tired when a day or some aspect of it had not gone well. "Verbs were boring, and I found it really tiring" (Journal, January 20). "When Thursday's class bombed with 7-C, I got really angry--and was tired and frustrated" (Journal, February 13 and 14). I saw less commitment from some students at the end of the year which was energy-draining for me.

Sources of Energy

If my sources of energy were drained when students misbehaved or a lesson failed, the reverse also seems to be true.

> I had a really good time teaching adjectives because we were doing things I enjoyed doing--these classes weren't energy draining, they were energy giving. (Journal, January 20)

> It (today) was very unstressful and problem-free. My students knew why they were doing something, enjoyed the content, and experienced it in some . . . diverse ways. (Journal, January 20)

Feelings of success also gave me energy to continue trying to implement learning style theory.

> I really feel that I am beginning to get a handle on applying l.s.t. (learning style theory) now and it feels so good. (Journal, February 18)
>
> For the first time I really feel like I am teaching . . . it's funny too--when I first began making all these changes it was stressful for me. Now I can't imagine teaching any other way. (Journal, March 4)

The knowledgeable observers also contributed to my feelings of success by providing external verification of my progress in the application of learning style theory. "Since Michael and David have been in my room and commented on what they saw, I now not only feel like I am doing nothing, but also want to do more (Journal, March 3).

Conclusions

Obviously, the act of teaching requires energy. Perhaps the more successful a teacher views himself/herself to be, the less fatiguing teaching becomes.

Theoretical Points

Finding a Focus

Butler (1984), Dunn and Dunn (1984) and Swassing and Barbe (1979) give teachers many practical suggestions of how to begin implementing their specific theories. For me, however, knowledge of several theories was overwhelming. Trying to combine all the suggestions together was all but impossible. This notion is supported in the literature. "With the multitude of possibilities, an educator could go mad just wondering where to begin" (Henson and Barthwick, 1984). Friedman and Alley (1984) acknowledge the difficulties a teacher has in deciding how to begin implementing learning style theory. "The teacher's needs are primarily those of translation. How can so many ideas and so much material be utilized?" (p. 77). And finally, there is the reality of classroom life with its constraints upon teacher time and energy.

> Teachers do not have time to juggle classes of 30 or more students while giving attention to 20 or more style preference factors for each individual student. The specific need is to delineate ways whereby teachers can focus upon selective basic style preferences of their students and have materials available at their fingertips to utilize as learning activities in support of those styles. (Friedman and Alley, 1984)

As Friedman and Alley (1984) point out, there is no research a teacher can use as a guide to implement several theories at the same time.

Lesson-as-Planned

Planning was for me an evolutionary process. Constant evaluation of my lessons as planned led to constant changes in the planning process. The stages that I went through closely parallel Butler's (1984) concept of Style Differentiated Instruction (SDI), but it is important to mention that my progress through SDI levels was not necessarily a linear one but rather was more circuitous in nature.

Using SDI Level I, the Single Approach, in which the teacher still only uses one style but teaches students the stylistic demands of it is where Butler (1984) says most teachers begin when implementing learning style theory in their classroom planning. The starting point I chose, however, more closely parallels SDI Level II, the Variety Approach. In this approach, the teacher presents the concepts or skills to be learned in a manner that is consistent with the mediation demands of all four learning style groups some of the time. Each group then gets attention approximately one-quarter of the time over the course of a single lesson or succession of lessons.

This type of planning led to my concept of project work or SDI Level III, and IV, the Multiple Approach. How the teacher offers "qualitatively different stylistic options to students from which students may choose their preference" (Butler, 1984, p. 193). Following the guidelines of this type of planning, I planned for student activities that addressed all four learning styles, explained to the students how they would be evaluated, and offered individualized assistance. However, because I failed to explain to the students the stylistic demands of each of the four options, I missed a critical step.

> Teachers who support style concepts rate the value of learning basic style skills in all areas very highly. However, they also express the opinion that students need guidance through this process. These teachers stress that students will not necessarily achieve skills in nondominant styles simply by being exposed to the need to know them. (Butler, 1984, pp. 226-7)

My problems were two-fold. Because my students did not know what the content objective of summarization meant, they could not possibly know how to express it by using one of the CS, AS, AR, CR choices I had created.

This led me back to Level II, the Variety Approach. I decided that students needed to be exposed to a skill like summarization through a variety of teaching techniques and then they could incorporate it into an SDI Level III project. By incorporating both the Variety and Multiple Approaches in my planning, I believed I could remain true to the content of the curriculum guide but allow students to experience it at least some of the time in a manner consistent with their learning style. The Combination Approach was developed by me in a response to the needs of my students. This finding is supported by Butler.

> As you deepen your knowledge of style, and gain confidence in your ability to understand and to accommodate other styles, you will integrate your own approach to style into your content area, level of expertise, and teaching experiences. The principles of SDI can only serve as guides for you. It is up to you to apply them using your own style of creativity. (1984, p. 182)

The importance of instructional objectives in the planning process is discussed in Butler (1984). She states that in the planning process, teachers must be willing to "investigate the mediation demands underlying the objectives and delivery of the formal curriculum" (p. 186). My belief in the importance of objectives as a method of keeping my students and myself from deviating from the curriculum as mandated by Alberta Education while still allowing students to experience that curriculum in various ways is also supported by Butler (1984). She urges teachers to

> tell your students your course, unit, or lesson plan objectives. Objectives are targets to focus the mind's energy on the intention or aim of the learning experience. (Butler, 1984, p. 239)

My notion of style flex to stretch students' abilities is also supported in the literature. "Ideally students need to learn how to operate at knowledge, comprehension, and application levels in each style channel" (Butler, 1984, p. 226). I had planned on providing for this by presenting large group instruction to students using different teaching styles that appealed to each of the four learning styles. I hoped that by doing this, I could teach students how to function in nondominant styles. "Guided mismatch through learning experiences helps students to gain and practice skills that they do not naturally use" (Butler, 1984, p. 226).

Two important issues for me, the importance of teacher organization and the amount of time required by the Multiple Approach, are not mentioned in the literature.

Lesson-as-Taught

When I first began attempting to incorporate Gregorc's (1979) learning styles into my lessons, I relied heavily on my lesson plans. I did not have a vast repertoire of strategies I could use in all four styles. This notion is supported by Butler. "If students are to learn the basic skills across four styles, then teachers need the skills to teach and model at knowledge, comprehension, and application levels in each style channel" (1984, p. 228). Learning these "basic skills" took time.

It was my experience that some students in the class did not know what their learning strengths were. I felt that this was due in part to the immaturity displayed by some students. "Some people have a dominant, natural style but need time for it to emerge as developmental stages and maturing experiences allow" (Butler, 1984, p. 31). Allowing students to make choices and them reflect on those choices was the method I used to try to get students to be more aware of their learning style preferences. "Some people need many experiences with using different mind channels before they recognize their own natural channel" (Butler, 1984, p. 32). Reflection is a necessary second step to experience. Adolescence can be such a time of physical and emotional upset that Butler cautions, "at these developmental ages and stages, it is appropriate to include discovery of self and style into a curriculum offering options for all four styles" (1984, p. 128).

Rita Dunn (1984) also believes that some students may not know what their learning style is. "Having tested more than 350,000 youngsters, we can verify that most do, some don't, and others do only for only part of their style" (p. 12). She does not, however, actively encourage thoughtful experimentation to help students become more aware of their strengths.

My decision to allow students to go to the library and other alternative spaces was based on the realization that my classroom had become too small to realistically incorporate some selected learning style preferences. Rita Dunn (1984), however, seems to believe that a single classroom can be modified to meet the needs of all learning style preferences. "For no money and little effort and time any interested teacher can redesign the instructional environment into a totally responsive atmosphere for almost every student" (p. 14).

My decision to introduce goal-setting as a means by which students could organize their time and work is not supported in the literature. Neither is my experience with the students' "comfort questions." Perhaps this relates to Butler's (1984) point that teachers need to be creative in their application of SDI.

Sources of energy and sources of fatigue emerged as being important issues to me. However, there is no mention of teacher energy in the literature.

Lesson-as-Evaluated

Evaluation is a topic that learning style theorists do not directly address. Butler (1984) makes the claim that

> if teachers can provide options rather than forcing all students to always take the same approach to learning, students have a greater chance to be successful in their own way. (p. 135)

To have students accept differences in themselves and others, to create an environment in which students feel it is safe to take risks by approaching learning in new ways, and to allow students to approach learning from their strengths are the goals Butler (1984) advocates. However, she does not offer any suggestions on how to evaluate whether or not this is occurring. While she does offer model lesson plans corresponding to the different levels of SDI, she does recognize that

> there is no one "correct" approach to applying style differentiation instruction. The examples reflect how individual teachers creatively applied the theory, concept, and strategies associated with this model to their own situations. (1984, p. 261)

Once again, she does not offer any ideas on whether or not one's "creative application" is effective or not.

Dunn and Dunn (1984) offer teachers a wealth of practical suggestions for incorporating learning style theory into their classroom. Rita Dunn suggests ways of "making the classroom responsive to the children's environmental preferences" (1983, p. 42), of helping children understand their modality preferences, and helping the teacher design instructional materials appealing to different learning styles. Teacher competence with implementing learning style theory comes to be measured against these and similar strategies. How well the approach is working for the students becomes judged against the claim "research verifies that students learn more and remember better when taught through their styles" (1983, p. 43). Evaluation in this sense rests on how well the students are achieving. Because I chose to incorporate only some of the Dunns' (1984) theoretical notions into my teaching practices and classroom environment, the evaluation ideas offered by them were unsuitable for my needs.

Energy

Even though this study found teacher energy to be so critical to the translation of theory into practice, learning style theorists do not assign it the same degree of importance. Rita Dunn (1983) states that it takes very little energy to modify a room. There is no other mention of energy in the literature.

Environment

Introduction

In addition to my teaching role the teaching environment was also modified in an attempt to meet student needs. This section describes the many changes I made in an attempt to create environments to match student learning styles. During the first part of the year my classroom looked similar to others in the school with uniform lighting, desks in straight rows, and the teacher's desk at the front of the room. The changes that were incorporated from January to June and their subsequent effect on the rest of the school are included under the following sections: Classroom, School, and Staff.

Classroom

Lighting

Changes in lighting were easily accomplished with the removal of some of the fluorescent tubes. This created bright, medium, and dim areas. Students were initially permitted to choose where they wanted to sit for a two week trial period. After this time was up, they could make a change if they so wished. While not all students found the level of lighting to be an issue, for some it was very important.

> I can work better in bright or semi-bright light than I can in a pretty dark place because I'm more alive and active. When I work in a dark place I get tired fast and can't work as good (sic).
> - Jason

> I like the bright light because it makes me bright and cheery. - Robert

Groupings

One change quickly led to another. Because I knew that some students worked best with others, I allowed students who wished to work in groups to sit at the front of the room, and those who wished to work individually to sit at the back. Once again, for some students this was important.

> I choose to work alone because I find that if I work with someone else, they (sic) don't think like me and we just talk so the last minute I do it myself. - Peter

> I always work with the same partner because it is fun to work with Stephanie. We don't full (sic) to (sic) much. We always think of ideas. Sometime we disagree and we have to write it out to think who's better. - Le

> I always worked with Anne or Cynthia. -Diana

The groupings tended to be fairly stable. Some students always worked individually, and others always worked in groups.

Noise Levels

I found it difficult to account for quieter and noisier sections in my room. I felt that if the groups were sitting together that would create a noisier section than the one in which the students were sitting individually, but this was not very successful. My classroom was too small and the noise from the groups filtered to the back of the room.

Furniture

I became a scavenger of furniture that the school was not using to try to create more alternative areas in my room. A table was acquired from the science department which would allow for group work; soft chairs were donated from the library which were placed in one of the back corners to create an informal area. Three large dividers that the art department used to display student work on parent evenings were placed at the back of the room to create solitary work spaces for students who needed to work alone.

> There is the regular, traditional classroom setup. There's the space in the back with dividers for individual work . . . . Comfortable chairs as well as the traditional chair. The lighting, partially off in one class, put on by a kid in between the classes, changed back to a more muted tone by you in the second class. (Carole, June 5, p. 1)

Adaptability

My classroom environment was very adaptable.

> When I went to the Rita Dunn workshop, I remember listening somewhat skeptically to her comments on how easy it is to modify a room. I thought sure, maybe for elementary teachers, but how about for the secondary teacher who has so many classes going in and out all the time? I realize now that this was rather naive on my part. The key is that nothing is permanent. Students can very easily move desks at the beginning and end of classes. This is not a problem. I can also make use of the book room for students who need total silence and the library for students who need tables to sit around. (Journal, February 10)

At the beginning of each class the room would be organized with the desks in traditional rows. Students would come in, sit down, and after hearing what the plans were for the period, would find a space to work.

> I see students for whom whatever environment they are working in has become their environment--my classroom is their classroom, a place that can be quickly modified to be a theater, a newspaper office, an art studio, a "regular" classroom--a place where students are comfortable meeting in a large group, small groups, working individually

> behind screens or out in the open. (Journal, May 6)

My room could easily be changed to meet student needs.

Student-Centered

In project work students were given a number of different options from which to choose their assignment. These options each related to one of Gregorc's (1979) four learning styles. Completed project work was continually displayed partly because I wanted my students to see and experience all the different ways their classmates had completed a project. I believed this would help increase student awareness of the validity of the different approaches the assignments had taken. Work was also displayed because the students were so proud of it.

> I got very much the sense of your value their work because the room is filled with their work in many ways--their work in models, their work in papers, their work in dioramas, their work in what? Multi-levelled is what I put--a multi-levelled appreciation of their work. And that gave the whole room a texture that said student-centered to me. (Carole, June 5, p. 1)

Being in a student-centered environment felt very satisfying for me.

> My walls are covered with their work--the bulletin boards long ago became full and I broke one of the school rules and began tacking their work up right on the wall itself. Half-completed projects and some in the final stages of completion lounge about my room, and because I was there during their creation, I can look at these and recall excited faces and hours of careful work that went into them.

> Brent's "Welcome to Room 3" poster adorns one wall; presents from students (book marks, etc.) decorate my filing cabinet; a cooler of dry ice sits under my desk today ready for tomorrow's presentation . . . pictures that were presents from students are tacked up along my blackboard. Construction paper, tissue paper, glue, scissors, felts, rules are all in their places ready for the next project. Boxes of magazines students can use for cut-outs rest along one corner of my room. A display of mythology books sits ready for student use--and they regularly sign them out from me for the evening. One bulletin board is devoted entirely to a mythology display. My desk is constantly covered with file folders, books students bring in for me to read, felt markers, text books, etc. Students work there--it is my place, but it is also theirs. My room is one of action, reflection, enthusiasm, life, learning, and anticipation . . . it's a good place to be. (Journal, May 6)

School

Spaces

I believed I had done as much as I could with modifying my room, but student need told me that it had simply become too small. How much quiet could one student have if the one next door was involved in a group discussion? How could I decide which three students could use the dividers if more needed the solitude? How could I create enough space to allow for drama rehearsals?

I began to see the possibilities of breaking out of the confines of my room and into other areas the school had to offer. The library was right across the hall and a small book storage area was kitty-corner from my classroom. Alternative spaces for student use were found in the library, library office, audio-visual equipment room, and book storage area. In addition, some students preferred to work in the hallway outside my room. The total school became the learning environment for my students.

Freedom

The freedom to leave my classroom was very important for some students.

> I like to leave the room because you don't feel preseared (sic) and I feel good because you can trust us. - Leanne

> I liked . . . the option to leave the room. This gave us the chance to show responsibility.
> - Shane

> We got to move around and usually we'd never be able to move around. - Jasbir

> I worked by the window in the hall because I cannot saned (sic) a blacked up room because I also work by a window in a corner at home because I feel I can have fredem (sic) instead of being in a non-window place. - Judy

At one point during the year, I had a substitute teacher for three days while I was chaperoning a field trip. I did not believe it was feasible to have students leave the room in my absence and therefore required 7-C to remain in my classroom. They found this very restrictive.

> I felt closed in. I didn't get as much work done as if I was allowed to move around. - Dan

> I find it easier to work if we can move around. It's not as crowded. - Shane

Students also felt restricted during the last week of school when I would not let them leave the room because the principal was trying to keep student traffic in the halls to a minimum.

> I really felt wierd (sic) when you told us that it was the last week and we couldn't leave the room because you feel like you are in a closed up room and you can't move. - Leanne

Staff

Noise

Once I began to branch out of my room, I worried about what impact this would have on the rest of the school. I worried that my students would begin to ask for choices from their other teachers. I worried that they would be noisy in the halls when going to an alternative learning space, and I worried that once they got there they would be noisy and interfere with other students and staff members. I worried about the loss of direct control I felt I had over them as a teacher.

Some of these worries were well-founded and some were not. Students showed they were able to move from one space to another quickly and quietly.

> And yeah they seemed to be very serious about going to it (different places). They obviously have done it sufficient number of times now that they're getting pretty good about being quiet about it and

> being two or three minutes. (David, February 20, p. 4)

It was very helpful that the audio-visual equipment room, library, and book storage room were all across the hall from my classroom. However, toward the end of the year some students began to get a little noisy in the halls.

Librarian

I had received support from my principal to send students to the library and had made an agreement with Rick, the librarian, that if my students were ever disruptive to send them back to my room immediately. As my principal David remarked:

> Rick is super good that way. The only time he minds is when somebody sends a turkey there, and as long as you have an understanding with Rick that is please let me know if somebody comes in here and jacks around because it will be the last time I send them in here. (David, February 20, p. 5)

I relied heavily on Rick's support and visited the library frequently when my students were there. Because I only allowed students working individually to go to the library, they did not interfere with other students trying to work in that area. Groups of students, however, made use of the library office and audio-visual equipment room. I did not receive any complaints from Rick about my students until the end of the year. In June he banned my students from using the library office because he said they left the typewriter in there with all the keys stuck together. He was also displeased that some of my students had left a binder in the sink of the audio-visual equipment room.

Art Teacher

Because some of my students opted for artistic choices for their project work, I developed a good working relationship with the art teacher. 7-C needed a great variety of materials that were stored in the art supply cupboard. Lynne, the art teacher, shared the construction paper, scissors, glue, felts, yarn, paints, and stencils very freely with me. Without Lynne's generosity, 7-C would not have had access to many needed materials.

Principal

Administrative support emerged as being critical. In a school where most teachers put students in the hall when they are being disruptive, my principal had to learn my students were out there for quite different reasons.

> Having an understanding and supportive principal sure helps! I also asked him if my kids were a problem because they are in the halls so much, to which he replied, "Your kids aren't a problem at all." (Journal, May 7)

He found a display cabinet the social studies department was not using for me as well as offered me the opportunity to display student work in the hallway. He offered to find school funds to cover the cost of any low-cost equipment I might need. David gave me support by watching and evaluating my teaching. Without David's support, my ability to incorporate learning style theory into my classroom practice and environment would have been severely restricted.

Conclusion

When my classroom became too small to meaningfully incorporate all the changes I had made and wanted to make, I had two choices. First, I could call an end to making changes and stay within the walls of my classroom, or, secondly, I could expand the walls of my classroom to include other areas of the school. This second approach resulted in an impact on the rest of the school.

Theoretical Points

The Dunns (1978) offer a wealth of suggestions for teachers to use in modifying their classrooms. Some of the ideas including dividers, soft chairs, and differences in lighting were especially helpful. It was my experience, though, that my room design had to be very adaptable on a day-to-day basis. The arrangement of desks and chairs were much different for large group instruction than for project work. When students were involved in project work their needs also required a changeable environment. The Dunns do not address this issue of flexibility.

Because of my use of the total school as a learning environment, I found it critical to have administrative and staff support for my actions. This notion is not discussed in the literature.

There are no references to the environment in Butler (1984) because her theory concerns itself with only the cognitive aspects of learning style.

Emerging Student Role

Introduction

Changes in both teaching role and learning environment placed demands on students. Their role adapted to meet these demands. This third major theme discusses changes to the students' role under the headings Novelty Aspect, Self-Knowledge, Self-Discipline, Risk-Taking, and Ownership.

Novelty Aspect

Environment

Changes in lighting were readily accepted by the students. They really seemed to know whether the dim, medium, or bright lighting would be best for them. However, other changes caused some initial difficulties. Some students wanted to experience new environments simply because they were new and different. In an attempt to create private spaces, three large dividers were placed across the back of the room.

> They're (students) looking at them (dividers) as toys rather than as alternative spaces in the classroom . . . Yesterday, which was the first day I used the dividers, the students behind them kept peering over the top to see what was going on in the class, and the students in the class kept peering over the top to see behind. (Journal, February 12)

Perhaps because I only had three dividers, the novelty aspect of them lasted quite awhile. It was approximately three weeks to a month before students who wished to all had a chance to sit behind them. "I noticed, for example, some of the kids using the back areas there--a lot of that was some genuinely used them, for some it is still a novelty" (Michael, February 13, p. 1). After about a month, the dividers ceased to be a problem. Leaving my classroom to go to the library, audio-visual equipment room, book storage room and other facilities also posed some problems. Students would all rush up to me at once requesting their favorite space. Once students realized I would not "book ahead," the students tended to respect each other's chosen spots and would not intrude upon them.

Assignments

The novelty aspect was also present when I first allowed 7-C to make a choice about whether or not they wished to work individually or in a group on Myth Project #1. They were also allowed to choose with whom they wished to work. This caused some problems. For example, Ryan, Trevor, Edward, Jason, Dan, Pete and others could not function in a group and get their work done. They were too used to being isolated from each other. In addition, even some of the honors students giggled and talked the class away. Students working in groups also need to learn how to divide up the work equitably which can be a big lesson to learn.

Being allowed to make a choice from four options for the first time and act upon that choice proved difficult for some students. They asked me an incredible number of questions designed to reassure them they were completing an assignment correctly. They needed my attention. "I think a lot of the questions were security questions because a lot of the stuff was I need to be noticed Ms. Jackson" (Michael, February 13, p. 3).

Gradually as my students became more comfortable with some of the choices they had made, they began to gravitate toward these same choices in new situations. They began to have an understanding of their learning preferences. On Michael's second visit in April, he was favorably impressed with 7-C.

> A lot less of the novelty aspect of it was very evident this time. Remember last time I was here, you had just got the dividers in and everybody was still into the whole, "Oh, isn't this novel, isn't this neat, let's try this, we all want to do it." What I'm seeing is a greater sense of knowing. This is the way I like to work, this is what I am going to set out to do. (Michael, April 30, p. 1)

Self-Knowledge

Environment

Most students gained the knowledge of which learning environment from many choices worked for them. Students could in the classroom in formal desks or informal soft chairs, private spaces behind the dividers, all under different lighting intensities. Out of the classroom many other areas were included for student use. These included the library, library office, audio-visual equipment room, book storage room, drama room, and hall space. Students chose where they wanted to work. I did not assign them spaces unless they misbehaved and I had to bring them back to my classroom. This occurred infrequently.

Many students consistently returned to the same places to work. Paul, who was repeating Grade Seven, found that he needed the privacy and silence of the library. He became very distracted around other students and noise. "Paul came back from the library before the period was over to do a picture for an answer. When I asked him why, he said, 'Because there was a film on in one of the other rooms, and it was too noisy' " (Journal, April 12). Laura, an honors student, had been working in the library but ended up creating her own space in my classroom.

> Today Laura and I created a space where she could work in the far right-hand corner of my room with a divider and I encouraged her to bring blankets or pillows from home to put on the floor . . . She said, "Okay, so this will be my little space now." She paced it out, peered over the top--she's barely tall enough to be able to do this--and seemed real pleased. (Journal, March 13)

Judy liked working in the hall by the window, Robert and Andrew always remained in the classroom, and Shane needed the privacy of sitting behind a screen.

Groupings

Student groupings were not prearranged by me. Students needed to learn if they worked best by themselves or with others. Some of these groupings remained stable. For example, Robert and Edward always chose to work together while Peter preferred to work alone. Some students needed to experiment with working in different groups. "With this last project, I've had some interesting new combinations. Shane, who usually prefers to work by himself, is working with Edward. Stephanie and Le are also working together for the first time . . . as well as Andrew, Robert, and Brent" (Journal, March 9). Some students discovered they worked best in a group for project work, but better individually for shorter in-class assignments.

> David, Anne, and Cynthia are all good friends--and today all 3 of them chose to go to the library. I assumed they were going to work together, but when I went over there, Anne and Cynthia were working together and Diana was by herself. I asked Diana about this and she responded that she worked better by herself. So here's a case where one student definitely knows how she works the best. (Journal, March 25)

Assignments

Learning how to choose which assignment to complete was another major decision my students had to learn how to make. I would present the choices to the class and discuss each of them, but I did not assign choices to students. They made these on their own.

> They have to make a choice, they have to act upon the choice, and each one of those choices does not provide a clearcut path. They have to make choices all the way along . . . and so it becomes hard

> because it requires them digging down into their own sense of knowing. (Michael, April 30, p. 6)

My students really came to like choosing assignments in project work. This freedom was really important for some of them.

> It's a lot (sic) eisier (sic) deciding what you want to do eisier (sic) than just getting orders for a project. - Trevor
>
> I liked L.A. because we had choices not only rules. Everyone was given a fair chance. You didn't pressure us to do things like reading the story aloud. - Laura

The freedom to choose means that sometimes a bad choice will be made. Witness the case of Roy, who chose to do a summary of the Greek creation myth in cartoon form because "it seemed like fun and I could show my feelings with drawing and writing." However, what was the most difficult aspect of the project for him? "The drawing and colouring were the hardest to do because I'm not very good at it."

Evaluation

My students learned not only how to make choices but also how to evaluate the choices they made. This was accomplished largely through the Project Response Sheets I asked students to complete at the conclusion of each project. On these students were asked to reflect upon what they chose to do and why. They were also asked to think about what they found easy and difficult about a particular assignment. At the completion of some projects, students were also asked to give themselves a mark.

Students displayed differing abilities with respect to reflection and evaluation. For example in responding to the question "What aspects of the project did you find easy to do? Why?" on Myth Project #5, the students' answers indicate a difference in how thoughtfully the question was answered.

> The end. Because I had many ideas for the end.
> \- Jasbir
>
> All of it. -Duane
>
> The drawing. Because I like to draw. - Le
>
> I found writing easy because we know lots about them (gods and goddesses). Also I like to make up things. - Diana
>
> The drawing and the writing. Well it fit right in to aur (sic) category because Lai is a good drawer, and I had a good idea for the writing.
> \- Roy

At the end of the year before completing project #5, students were asked to generate a list of all the ways they had been allowed to complete assignments. The list included such items as radio plays, reader's theatre, picture books, posters, question, research reports, and flow charts. The students were then asked to evaluate which presentational styles had worked for them. As Carole pointed out, "It's certainly self-evaluation when the kids not only generate the list, but are free to check that which they have been successful at" (Carole, June 5). In doing this I wanted my students to arrive at their own understanding of their learning style, not one externally imposed by test results. And I also wanted students to realize that by seeing all the different choices that worked for their classmates that there was no one inherently correct approach. "You are freeing them to speak what is the truth about their attitudes at the same time that you are helping them to shape a flexibility about those attitudes" (Carole, June 5).

Self-Discipline

Time

When students were involved with project work that encompassed several classes, they had to decide the best use of their time on a per class basis. I kept reminding them of due dates, but because they were generally at different stages in completing their particular choice of assignment, I could not tell them what they should have completed by the next class. "I am expecting them to learn to trust themselves rather than what the teacher tells them as being the correct way--and also to take an awful lot of responsibility for their time when they are on project work" (Journal, p. 128).

In order to help students manage their time, goal-setting was done on an individual basis at the beginning of each class. Students decided whether or not they needed homework in order to have a project completed on schedule.

> I think it (goal-setting) gives them some sense of purpose because I think you were right when you said that a fifty-minute period, or a three day project, or a five day project can be awfully long. And for some of them it's so long an imposing that they figure well, why start now when there's no point to it? (Michael, April 30, p. 2)

Behavior

Not only did my students learn how to choose their places to work, they also learned how to accept the rules that went with that. They knew that if I saw them misbehaving, they would lose the privilege of leaving my room. This involved learning a certain amount of self-discipline. There were a few problems with this. On one occasion, Ryan had been caught drawing on a library carrel. Even in my room he still continued to bother other students by poking them and generally interfering. Paul left the computer room in which he and Jason were working. While he was gone, Paul locked him out.

> It's realities that despite an entire year of learning how to work in another space, there are still kids who goof off. If I didn't see that, I'd think they were putting on some kind of a phoney act . . . that's being asked--I'll get away with what I can get away with. (Carole, June 5, p. 6)

Generally speaking, however, my students learned how to behave and get their work done without my constant supervision.

> I walked into the drama room expecting, perhaps, to find the kids not working. Instead, here's what happened. Shane is standing on a box in the center

> of the room. The overhead lights are out--red lights are shining on Shane as he stands there. The other students in the group are lounging around on the stairs, on chairs, other boxes, and the floor. They look surprised when I enter--they appear to have been concentrating very hard. Shane is standing on the box like he is a character out of mythology. There was a real feeling in the room of I don't known what or how to describe--of intensity, of creativity, of thought, of enthusiasm, and of commitment. (Journal, March 15)

My students didn't cause trouble in the library, other students did.

> There is a greater respect for the other person in the group, the other people in the class or the workspace or whatever . . . For example, the people who were working in the library. Normally it's very difficult to get people to be quiet in the library as evidenced from the one girl from the computer class who walked in. However, your students no problem. They know that it's a library, they know the rule, but because of respect for other people, they do all that automatically because they know that this is a silent workspace, that's where you work in a group or by yourself, but it's a quiet workspace. (Michael, April 30, p. 13)

Risk-Taking

Voluntary

With Myth Project #1, I had assumed that students would automatically choose an option they knew they were good at completely. The majority of students did this. When asked the question on the Project Response Sheet "Why did you decide to do it (project)?", some replied

> Because it was easy for me and I choose (sic) it because I (sic) good at art and drawing. - Lai

> I decided to do this because I have had experience in doing this project. - Robert

> Well it looks easy and I have done it before. - Jason

Fewer students, however, opted to try something more challenging with this first project.

> I thought it was a small challenge for me to take a story and draw it out to summarize the story. - Andrew

> I decide (sic) to do it because I thought it would be challenging and fun to draw a family tree. - Shane

This voluntary risk-taking behavior increased over time. Some of them seemed more and more willing to attempt something different.

> You can see in a lot of those kids the fact that there is a discrepancy between what they think they can do and what they can do--because some of them still amaze themselves when they come up with ideas. (Michael, April 30, p. 10)

> A live play was easier because I wanted to see how acting is. - Lai

> . . . I thought that it would be different.
> - Laura

> I never tried readers (sic) theatre before and I thought it would be neat. - Edward

One difficulty that arose with this was with evaluation. Because so many students tried something new on Myth Project #4, there were some presentational problems. For example, students who had never done a play before broke out into giggles. Those new to reader's theatre spoke far too softly. Marks reflected the problems students had with this project.

> The more risk-taking that you allow children, and the more you hope they will try new things, the greater the chance that things will go wrong. The key then becomes to turn it into a constructive experience as much as possible. (Journal, May 8)

I took great care in pointing out to groups what was done well in addition to what should be improved if they were ever to attempt a similar project again.

Requested

On the last project of the year, I deliberately requested that students attempt something different from what they had completed before. My reasons for doing this were explained to the students.

> When I made the statement to them (students) that fundamentally I would not be doing them a favor in life if I always let them approach learning from their strengths only--and asked them why--they were able to tell me that it was because they should learn to be flexible and that other teachers may not let them always make so many choices. And as Carole pointed out, they said this without any bitterness in their voices. (Journal, June 5)

Students generally cooperated with my request.

> Write 2 minute mystery. I wanted to do something different. - Stephanie

> I chose to do a poster. I decided to do a poster because I had never did (sic) it before. I also thought that I should try something I didn't like because I might become good at it and I might start to like it . . . I thought I wouldn't have any fun at all but I'm glad you suggested for us to do something different because I enjoyed it. - Leanne

> We decided to do sumthing (sic) different (sic) because we thought it would be fun and exiting (sic). - Karen

"What did you learn by choosing different types of assignments?" was a question I asked my students. Their answers indicate that even if they made a bad choice, they learned more about themselves.

> It sometimes is good to make a bad choice because you know what you aren't good at. - Leanne

> I think it is good to try diffrent (sic) things, because you learn if you are good at it or find out if you are not. - Andrew

> I liked haveing (sic) a chocie (sic) at projects because I learned how to do thing (sic) which I never knew I could do before. - Karen

> I think it is better to choose different things so you can find out what else you could do.
> - Diana

Resourcefulness

After the initial novelty period wore off, students showed an increasing ability to deal with their own problems. These problems varied in nature and included dealing with other students' misbehavior.

> Brent was in my room working by himself, and Robert and Andrew were also in there reading to each other. Brent asked Robert to read more quietly to which Shane said, "Brent, if you don't like the noise, go over to the library--and off he went for the very first time to a new environment. (Journal, April 12)

Resourcefulness was also displayed in solving problems of a more technical nature.

> In lang. arts today they (Trevor and Ryan) wanted to use the overhead projector in the book room so they could trace some pictures and diagrams for their title pages . . . . Just after they went to the book room, I ducked out to the office for a few minutes. When I was coming back down the hall to my room, they were walking down to the office to find me because the light had burned out in the projector. Two months ago, they would have sat and waited for me rather than try and solve the problem themselves. (Journal, February 10)

One group using tape recorders for the first time had to discover on their own that all group members must sit equidistant from the microphone. Diana, Cynthia, and Anne performing a play required they recruit Shane and Edward to run the lights and organize the props.

Materials were used by students in very effective ways. A prop designed by one group of students for inclusion in their play was redesigned twice for use by other groups. Originally a door, it became a background for a weather map and still later a judge's bench. "Kids don't need a lot of expensive things around--the inventive ones can take existing materials and modify them" (Journal, May 15).

At times it seemed to me that students were not only helping each other, they were also learning from each other.

> I'm amazed when I put response sheets together done by students in a group--at how much they are able to capitalize on each other's strengths. They seem to find opposite things easy and difficult. For example, Anne found writing the play easy, but acting hard while Cynthia experienced the exact opposite to this. Laura found everything easy, while Diana reported the writing easy but acting . . . hard. So all in all, here was one group that totally complemented each other. (Journal, May 12)

In this sense, the ability of individual students to deal with problems was shared among the group. Resourcefulness occurred both individually and on a group basis.

> These guys were talking about, "Well yeah we'll have a white line here, and a red line there, and we'll have some dry ice--some smoke you know." And I said, "Well, how are you going to make smoke?" "Oh, we'll go down to the ice palace whatever and get some dry ice" . . . they're starting to be resourceful. How can we create this? Well, we'll do it this way. (Michael, April 30, p. 15)

Conclusions

My experiences with implementing learning style theory showed that students had to accept the responsibility for not only making choices but for acting upon them as well. They learned how to make good choices and how to learn from bad ones. And they also readily learned to accept responsibility for this.

Theoretical Points

Unlike the findings of this study, very little attention is paid to student role in learning styles literature. The Dunns' (1983) research documents that students learn best when taught through their learning styles, but they have not attempted to describe or define what that experience may be like for students. In addition, they have not considered what the process of instituting environmental and instructional changes means for students. Butler (1984) states, "students need choices so they can work in their own style, but they also need to try new approaches as much as they need to entertain new ideas" (p. 137). My experience revealed that this approach to learning asks much of students. It requires them to gain self-knowledge, to learn self-discipline, and a certain amount of resourcefulness. It encourages them to engage in risk-taking behavior. These ideas are not discussed in the literature.

CHAPTER FIVE

Reflections on the Study

Introduction

The findings of this study and some implications arising form them are discussed under the following headings: Emerging Teacher Role, Environment, Emerging Student Role, The Research Method, and A Final Reflection.

Emerging Teacher Role

The findings of this study suggest deciding how to begin translating learning style theory into practice involves more than deciding with which theory to begin the process.

> Do we close our eyes and ignore theory? Do we pick a theory and say, "Hang it all, I'm going with that"? We hope not. Ignoring theory is an invitation to ignorance. Adopting only one theory simply raises prejudices to another level. (Connelly and Clandinin, 1988, p. 85)

The process of deciding how to begin involved going beyond theory to an issue much more fundamental to teaching.

> What is your aim in being a teacher? What is the end result of your teaching actions? If we accept that "objective" refers to something external to ourselves, then, as teachers, what do we want to stand apart from us once our teaching is completed? (Butler, 1984, p. 64)

My goal, "For me, part (much) of the value of learning style theory comes in getting students to trust themselves--their perceptions--their emotions--their thoughts" (Journal, January 20) became a type of philosopher's stone by which I judged the merits of theoretical concepts. This finding strongly suggests that teachers need to clearly articulate their goals for incorporating theory into their teaching practice before implementation can meaningfully occur.

Lesson planning required the focus of attention to both learning style and mandated curriculum. Several concerns arose from this. The difficulty in lesson planning related, in part, to my lack of expertise in certain teaching styles. Whereas Butler has said, "If we expect students to learn the necessary basics to operate in all four learning areas, perhaps teachers would want to learn the basics of each style as well" (1984, p. 228), I found it was a necessity for me to gain facility with teaching in ways which would appeal to all four types of learners. In addition, concerns that the prescribed content of the curriculum guide had been covered emerged during the study. I became alarmed at the amount of class time project work was taking and was afraid that 7C would not be able to complete the language arts program. Perhaps the necessary dual focus of attention to both learning style and prescribed course content is a little overwhelming for teachers to begin to plan for student learning styles.

Available resources need to be considered by the teacher when lesson planning. My realization that I did not have to create all my lesson materials from scratch and that existing resources could be modified to suit my purpose of meeting students' learning styles was a breakthrough. It simplified the planning process considerably.

The discovery that my planning closely patterned Butler's (1984) notion of SDI is significant. Her theory became a guide I could follow in the planning process, and I referred back to theory throughout the course of this study.

All of these findings with respect to planning seem to indicate that this is one area where all teachers but especially those beginning to incorporate learning style theory into their lesson planning need assistance. School board inservice programs providing for cooperative planning could address this issue. For example, just as I discovered my students sometimes operated off of each other's strengths in groups, teachers could do the same. While it is true that I familiarized myself with sequential teaching strategies by reading about them, how much more could a dominant sequential teacher teach me? Reassurance of available resources could also be addressed by cooperative planning. Theory could also be introduced into these planning sessions as necessary. I do not mean to imply that all teachers would necessarily teach from exactly the same lesson plans, but what I am suggesting is that my problems with planning could be at least partially alleviated by capitalizing on the strengths, experience, and knowledge of a group of teachers.

This study's findings suggest that teaching in nondominant styles is initially an uncomfortable experience. Teaching feels quite forced and mechanical and there is an over reliance on the lesson plan. This would seem to suggest that during this period of adjustment teachers require frequent feedback on their teaching skills and strategies. As teaching becomes more natural, the need for feedback decreases. "We learn something new and that may be said to be theory. It becomes practical when it seeps into our personal knowledge and becomes part of us so that we act in ways that reflect the new ideas" (Connelly and Clandinin, 1988, p. 89).

The translation of theory into practice does not negate previous teaching experience. Theory becomes modified by the teacher and subsumed into the structure of his/her background, beliefs, and aspirations. For example, recognizing that 7C needed a certain degree of structure in their lessons was based on my experience with other similar classes. Christina viewed my class in terms of effective teaching strategies with learning styles overlaid on top. "We use the term 'personal practical knowledge' to emphasize the teacher's knowing of a classroom . . . it is a particular way of reconstructing the past and the intentions for the future to deal with the exigencies of a present situation (Connelly and Clandinin, 1988, p. 25). This would all seem to suggest that knowledge and implementation of learning styles theory can neither destroy a good teacher nor save a poor one. It is not the solution to all that is wrong with the educational system.

My translation of theory into practice also required creative solutions to immediate problems. Theory cannot possibly deal with all the issues. Implementing goal-setting at the beginning of class periods, designing Project Response Sheets, and putting an end to "comfort questions" were my attempts to deal with perceived student difficulties.

> Because the unique case falls outside the categories of existing theory and technique, the practitioner cannot treat it as an instrumental problem to be solved by applying one of the rules in her store of professional knowledge. The case is not "in the book." If she is to deal with it competently, she must do so by a kind of improvisation, inventing and testing in the situation strategies of her own devising. (Schön, 1987, p. 5)

The uniqueness of a teacher's background combined with the particular context of the teaching experience seem to suggest that while theory can help guide practice, it cannot prescribe it. Schön refers to this as "professional artistry" or "the kinds of competence practitioners sometimes display in unique, uncertain, and conflicted situations of practice" (1987, p. 22). The necessity of creative decision making combined with the discomfort of teaching in nondominant styles underscore the importance of frequent teacher feedback from knowledgeable observers during the initial stages of translating theory into practice.

While theory helped guide the planning and teaching of my lessons, evaluation makes only a cursory appearance in learning styles literature. Here, however, it is considered solely in terms of increased student achievement and self-esteem (Butler, 1984; Dunn, 1983; Swassing and Barbe, 1979). While this is important, the findings of this study indicate that the scope of evaluation should be broadened and its need increased. Because the student is not the only actor in the classroom, other sources like the teacher and environment need to be considered in the process of determining the value of translating theory into practice. Consideration of the student alone can only give part of the picture.

It was my experience that evaluation was part of an ongoing process that helped guide my lesson planning and interaction with the students. Teaching strategies and techniques were evaluated, modified, and evaluated once again. "Teaching, in this sense, is a form of reflection-in-action: reflection on phenomena, and in one's spontaneous ways of thinking and acting, undertaken in the midst of action to guide further action" (Schön in Grimmett and Erickson, 1988, p. 22).

Perhaps because I felt I had placed myself and my students in a state of risk by incorporating learning style theory into my teaching practice, evaluation became critical. "What people experience in schools is central to any effort to understand what schools mean to those who spend a major portion of their lives there" (Eisner in Connelly and Clandinin, 1988, ix). Instead of being able to turn to theory to help in the evaluation process, I found it necessary to turn to other sources. Knowledgeable observers, Project Response Sheets, observation of my students, and evaluation of their work all helped in the evaluation process. The timing of the knowledgeable observers' visitations was especially critical in evaluating different stages from beginning, to middle, to end of this study. But, a method of evaluating the process from the perspective of an insider had to be found. For this I turned to reflective journal keeping.

"When we get into the habit of recording our stories, we can look at them again, attending to the meanings we have built into them" (Schön in Grimmett and Erickson, 1988, p. 26). Reflection each day would generally concern that day's events but in rereading several entries, I was able to see certain patterns of meaning emerging. "This ongoing reflection-on-action on a daily basis begins to provide insight into personal knowledge when you reread entries over several days or weeks. What connecting threads are apparent over time? Are there events or ideas that recur?" (Connelly and Clandinin, 1988, p. 35). In no other way except for having a knowledgeable observer present in my class everyday could I have obtained evaluation of such an ongoing nature. Reflection also afforded me the opportunity to fully explore different events during the day and make "sense" of them. As

Schön has stated, "It is sometimes possible, by observing and reflecting on our actions, to make a description of the tacit knowing implicit in them" (1987, p. 25). This reflection brought me closer to understanding the changes that incorporation of learning style theory brought to my teaching role. One question, though, must be considered with respect to this. If this reflection is so important, what does it add in time and energy to the translation process of theory into practice?

Even though this study found the concept of teacher energy to be important, it is not discussed in the learning styles literature. The findings of this study indicate that lessons that went well were energizing, and, conversely, lessons that went poorly were fatiguing. Positive feedback was also energy giving which underscores the need for frequent evaluation by knowledgeable observers for teachers beginning to translate theory into practice. Further research needs to more fully explore sources of fatigue and sources of energy for teachers. Without energy, how much theory can a teacher translate into practice?

Environment

In addition to my teaching practice, the classroom environment was also modified in an attempt to meet student learning style. As Rita Dunn (1983) suggests, changes in lighting, student grouping, and creation of informal areas were fairly easily accomplished. It is important to mention, however, that in order to manage many of my classroom changes, I had to become a scavenger of unwanted furniture. If other teachers in the school had also been interested in modifying their classrooms, one has to wonder how far the stock of unwanted furniture would have stretched.

While there was a bit of a novelty aspect, my students readily accepted changes in classroom environment. Changes in lighting, grouping, and design were accomplished one at a time over a period of several weeks. I would encourage another teacher to follow this practice because it gives students time to adjust to the new environment.

Several of my findings, however, seem to contradict the Dunns' (1983). I found that I could not have all students remain in the classroom and account for differences in noise level. Whereas Dunn and Dunn (1978) speak of modifying the classroom solely to accommodate student learning style, I discovered the design also had to be modified to accommodate the different projects on which the students were working. My classroom had to be a very adaptable place which Dunn and Dunn do not recognize. In addition, when I realized that my classroom became too small to incorporate meaningfully all the changes necessary to meet student learning styles, alternative spaces in the school were found in which students could work. Dunn and Dunn (1983) suggest, however, that all learning styles can be accommodated within a single classroom. Future research may wish to explore whether or not it is possible to account for student learning styles given the small size of most secondary school classrooms.

Branching out of my classroom into the rest of the school had several effects. First, while some students enjoyed being able to leave the room because they needed a high degree of mobility, for other students it was a chance to demonstrate their responsibility. Still others appreciated the fact that I could trust them. There was also an effect on the staff. I came to rely on the librarian for support and the art teacher for materials. My principal had to be supportive of my students being in the halls. Without the support of the teaching staff and school administration, I would have been greatly restricted in the amount of changes I was able to incorporate. Further research may wish to consider the impact of one teacher's attempt to translate learning styles theory into practice on the total school environment.

Emerging Student Role

This study indicates that the incorporation of learning style theory into my teaching practice placed certain demands upon my students. Learning style theory fails to address this impact on student role.

With change comes a period of uncertainty. Changes may wish to be experienced simply because they are novel. For example, most students initially wanted to sit behind the dividers. Also, needing reassurances expressed in the form of a multitude of questions occurred when they were first allowed to choose an assignment for completion. Perhaps I could have done more "advance work" with the students before instituting a change, but I am not too sure how much of this novelty aspect could have been avoided. Perhaps what is important for the teacher to know is that there will be a novelty period for the students after a change has occurred.

My students had to learn a great many things in addition to the content of the grade seven language arts program. When involved with project work, they had to learn how to manage their time. Students who chose to work in areas other than my classroom had to learn self-discipline or accept the consequences for misbehavior. Learning how to choose a project and then to reflect on that choice brought my students closer to a realization of their individual strengths and weaknesses. They learned to stretch themselves by choosing to complete a different type of project and following through with that choice. And finally, they realized it was possible to learn something from making a bad choice.

All of this was a tremendous amount to learn which learning style theory fails to consider. Future research should consider, in a more comprehensive way, the impact of learning style theory on the student role.

The Research Method

"One of the most important ideas behind participant observation is that there is no one right method. The method should match the study" (Wilson, 1977, p. 261). To try to be both participant and observer is a demanding enterprise.

> The ordinary participant in a social situation usually experiences it in an immediate, subjective manner. We see some of what goes on around us; we experience our own movements; we move through a series of activities as subjects, as the ones engaging in the activities. In short, we are insiders. Our experience of participating in a social situation takes on meaning and coherence from the fact that we are inside the situation, part of it. The participant observer, on the other hand, will experience being insider and outsider simultaneously. (Spradley, 1980, p. 57)

Trying to be both participant and observer was, at times, a little overwhelming. It demanded a multimodal approach to data collection. The knowledgeable observers, Project Response Sheets, student work, and my log and journal each helped to contribute to the depth and detail of the students' and my experiences.

A special word to be mentioned regarding reflective journal keeping. Keeping a journal is a very demanding, time-consuming process. At times I found it difficult to juggle my writing with all the other demands that accompany teaching, but I cannot stress strongly enough the value I found in reflective journal keeping for extending my understanding of being a teacher. "You know--it's funny--before I sat down to write tonight, I felt tense, anxious, and very tired--and now I feel peaceful and calm. This is a great way to work things out (for me)" (Journal, January 20). My condensed accounts proved invaluable as I sat down to write each evening, and I found that "one idea triggers another, that triggers another, and so on, and so on" (Journal, February 18). Journal keeping helped me make sense of my experiences.

A Final Reflection

Eisner's (1983) question which opened this study returns to close it. Yes, "theory is general" and "students are particular," but it is possible to bridge the gap between the two by careful reflection on the interaction between the two in the classroom.

And what is the value of such an enterprise?

- from the voice of theory

> Teachers will become better educators when they can begin to have explicit answers to the questions, "How do I know what I know? How do I know the reasons for what I do? Why do I ask my students to perform or think in a particular way?" The capacity to answer such questions not only lies at the heart of what we mean by becoming skilled as a teacher; it also requires a combining of reflection on practical experience and reflection on theoretical understanding. (Shulman in Grimmett and Erickson, 1988, p. 3)

- from the voice of the teacher

  > For the first time I really feel like I am teaching. (Journal, March 9)

- from the voice of a parent

  > I appreciate all the different projects you have given them and helped them so much with. I think the different ways of studying and teaching are really great. Leanne has enjoyed them so much. Just couldn't let school finish without telling you what an impression you made around our household. (Leanne's mother)

- from the voice of a student

  > I liked grade seven L.A. because we got the choice of were (sic) to sit, how to do things, and option (sic) to leave the room. This gave me the chance to show responsibility. L.A. was fun exciting usually never boring except in grammar. I hope next year is like this one. (Shane)

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APPENDIX A

CONSENT LETTER AND FORM

May 14, 1986

Dear Parents/Guardians:

In addition to teaching your child language arts, I am also a continuing graduate student in a Masters of Education Program at the University of Alberta. This has been the direct result of a sabbatical I received for 1984-1985 after eight years of classroom teaching.

During my year as a full-time graduate student, I pursued an interest in contemporary learning style theory. To that end, I have written academic papers in this area as well as done extensive research in both the relevant literature as well as existing classroom situations. In addition, I have co-authored a learning styles module for use with third year student teachers. As a result of my research, I have presented workshops on learning style theory to many different groups including school board consultants as well as university graduate and undergraduate classes.

Learning style theory has recently been adopted by the school board as part of its teacher inservice program. Basically, learning style theory attempts to describe the different ways that students learn. It is not tied to the content of a specific curriculum; rather it addresses itself to the instructional environment and procedures.

Learning style theory has a strong research base. The focus of this research has been primarily on the identification of various student learning styles and the implications arising from this for the teacher. At present, however, there exists a distinct need to study a teacher's experiences with the application of learning style theory. This has been the focus of my research for the past year. Documentation of my experiences may help to improve teaching practices in general for future educators.

.../2

Basically, the focus of this research is on myself--my experiences and reflections as I apply the principles of learning style theory on a day-by-day basis. In my teaching, then, I am constantly trying to adapt both my classroom environment and instructional procedures to accommodate the different ways in which students learn. Because your child has never been forced to make certain choices for the purpose of data collection, he/she has not been placed in a stressful environment.

The major source of data in this study is a journal in which I write every evening about my day's experiences and thoughts concerning them. When my thesis is written, the names of the students and school will be changed ensuring anonymity. This research is to be used primarily for the completion of a Master's Degree. It may later be referred to in educational publications and workshop presentations. At all times, student anonymity and confidentiality will be maintained.

Official approval has been obtained for my research from both the school board and the University of Alberta. In addition, the principal has been supportive and consented to my work in this area.

I am now seeking your consent for a number of reasons:

1. In writing about my experiences, I may have to refer to an individual student. Once again, the names of all students will be changed.

2. It may become necessary to interview students to validate my perceptions concerning their experiences.

3. I may wish to include samples of student work in my study.

4. Finally, I may wish to take pictures of my room as well as audiotape and videotape students as they work.

If your consent is not obtained, I will neither refer to your child in my thesis, nor interview him/her.

If you have any concerns or questions, please do not hesitate to phone me at the school. Parental visitations are also welcomed, but please call to arrange a time.

Thank you for your assistance in this matter.

Sincerely,

Nancy Jackson

PARENTAL/GUARDIAN CONSENT

Please indicate your preference.

___ I will permit my child to be involved with the study.

___ I will not permit my child to be involved with the study.

Please return this form with your child. Thank you for your consideration.

CHILD'S NAME ______________________________
(please print)

PARENT/GUARDIAN SIGNATURE ______________________________

STUDENT'S SIGNATURE ______________________________

APPENDIX B

PROJECT RESPONSE SHEET

Name . . . .

Date . . . .

Answer the following questions as completely and honestly as you can. There are no general right or wrong answers--only what is right or wrong for you.

1. Which project did you decide to do?

2. Why did you decide to do it?

3. What aspects of the project did you find easy to do? Why?

4. What aspects of the project did you find difficult to do? Why?

APPENDIX C

COLLAPSING OUTLINES

1. The initial set of cultural domains were:

   - Energy
   - Environment
   - Evolving Teacher Role
   - Finding and Maintaining a Focus
   - Journal Writing
   - Lesson/Unit Planning
   - Novelty Aspect
   - Student Ownership
   - Success/Student and Teacher
   - Theoretical Concerns

2. A taxonomic analysis revealed the existence of more domains and the relationships between them.

Emerging Teacher Role	Finding A Focus Lesson Unit Planning Energy Setting Expectations Respect Successes and Failures Relationship With Students Lesson Presentation
Emerging Student Role	Novelty Aspect Ownership Self-Knowledge Respect Pride Successes and Failures
Environment	Physical a) classroom b) total school Staff

Theoretical Concerns________________Implementation Process

3. Completing a componential analysis revealed that some domains in Emerging Teacher Role could be subsumed into others.

Emerging Teacher Role	Finding A Focus Lesson/Unit Planning Energy Discipline Lesson Presentation Successes and Failures

The themes of "Emerging Student Role" and "Environment" remained the same.

4. A final analysis involved another change in domains for both Emerging Teacher Role and Emerging Student Role.

Emerging Teacher Role	Finding A Focus Lesson As Planned Lesson As Taught Lesson As Evaluated Energy
Emerging Student Role	Novelty Aspect Self-Knowledge Self-Discipline Risk-Taking Resourcefulness

The Environment theme remained unchanged. The Theoretical Concerns theme had been subsumed into Emerging Teacher Role.

APPENDIX D

INTERVIEW TRANSCRIPT

Transcript Number 1 (June 5, 1986)

Interview With Carole

Nancy: Any general comments you have before we begin?

Carole: General, general comments about

Nancy: Okay, what I am trying to do very much through applying learning style theory in my classroom is account for individual differences and that kind of thing.

Carole: I saw that in many ways, Nancy. I saw that in what you have done with the space, so the first thing I looked at as I sat down to write some notes was what have you done with the space, and obviously you have done several things. You have acknowledged the fact that the kids come from classes in which there are desks in straight rows so there is that. There is the regular, traditional classroom setup. There's the space in the back with dividers for individual work. Whether or not that was used in the class doesn't matter. It's there. Obviously the notion of bringing plants in to the room--of color--of you trying to use and make possible a colorful atmosphere. I got very much the sense of you value their work because the room is filled with their work in many ways--their work in models, their work in papers, their work in dioramas, their work in what? Multi-levelled is what I put--a multi-levelled appreciation of their work. And that gave the whole room a texture that said student-centered to me. All work is valued on the same level despite differing gifts. I think we pointed out at one time the girl's drawing in which it was obvious she was doing such fine detailed work and right next to it a drawing that was obviously of the stick man variety. The typewriter there and not only there, being used by a student between classes or before classes. Comfortable chairs as well as the traditional chair. The lights off, partially off in one class, put on by a kid in between the classes, changed back to a more muted tone by you in the second class.

Carole: So yes, I think that in space and in light you're making the best that you can of what you have to work with here. Also, the effort to use other spaces and that's a whole space thing. Sending them off to the library, and they seem to be free to go to many different areas of the library. But, also, beyond space, your teaching is absolutely and utterly relaxed. And I don't mean nonstandard or nondemanding. I mean you are just so with them and yet so totally task-oriented while you're with them. You don't fool around, you don't let them get off task. You're teaching every minute but in a totally relaxed way. When you need to give out a signal that says pay attention, such as you were writing on the board in the second class and three boys in the back of the class were obviously having a good time, you looked at them, and you used that teacher look, but it was perfectly friendly. It was almost I'm expecting it of you, but it was the same time playing with them about past things that had happened. When you teased the boy about blushing, it was a teasing thing and it was I know you and I've never seen that happen in that way before, and yet it wasn't putting him on the spot. I think so much of your teaching style is what I would consider, although I've never seen anyone teach--you're telling me Rita Dunn doesn't do as she preaches. You do as you preach. I really think there is a rapport there that is quite obvious in June of the year that you have worked with them--that they know what you expect of them, that they're still kids. I'm not trying to give a rosy colored glow because some of those kids in the library in the second class were acting up in the library--were really as I came along to look over their shoulders and so forth straightened up and got on task again. So, I am sure your presence is demanded there all the time to keep them task-oriented--so they're kids and they're going to goof off.

Nancy: As a teacher you're constantly trying to weigh--okay do I want them to go combined with the fact this is last class combined with all kinds of things . . .

One mistake I really made when I first started doing a lot of this stuff was just going totally with the learning styles theory and forgetting everything else, and now I am realizing that no you've got to constantly keep in mind what they're like today and that kind of thing. That's why also the stuff at the beginning of classes with here's what we're doing today and for the next little while. Gregorc says the sequentials, they love that, it makes them feel secure. The randoms, it (sic) always set up so it's things they can live with. And it gives everybody a sense of purpose because I figure that if we are all not there for the same reason that anything else that I put on top of that is not going to work--if we don't have a common goal.

Carole: Even the handout, the sheet that you gave. It's organized, it has the sections, but it has places that say you have to do some work too, so the place for them to fill in the definition which you evolved from their ideas, the place for the due date and so forth, that says learning style theory to me as well as the choices. I was thrilled the way you drew out from them the choices they had made this year, did it through brainstorming, did it with the involvement of two kids at the board gathering their ideas from them, did it with the idea of volunteers with those two who had energy to burn, and then using the list they had just drawn up to make evaluation statements about their own year. That's a synthesis. They really synthesized their mode of operation for the entire year . . .

Nancy: One thing that so many teachers are concerned with with this learning styles theory stuff is they say yeah, okay. I know that kids can learn in different kinds of ways. ONe critical problem that teachers come up with is but what can I do as a teacher in my classroom in my regular school--which actually we've already talked about--you make due with what you've got. I've turned into a scavenger. Secondly, they say if I do these learning styles kinds of things, will the kids still learn?

Carole: Oh, gosh, well today was great proof of that, wasn't it? The fact that they are not learning only specific content in your questions about the story they had read the day before and the use of foreshadowing and the listening for clues in the two minute mysteries, all of that is a proof to me that they certainly are learning content, but you free them so when you say did you like it or didn't you like it because that's okay because we have different choices in life and different values and different opinions. You are freeing them to speak what is the truth about their attitudes at the same time that you are helping them to shape a flexibility about those attitudes.

Nancy: And that's one thing that I've tried really hard with these kids to teach them, to get them in touch with first of all what they're good at doing. Secondly, that hopefully through that process of watching what other people do and seeing what other work is displayed, an appreciation for what others do.

Carole: Yes, you listen all the way through an attitude. When a kid gives an answer to you, you listen all the way through to the end and verify it before you move on. And you stop anyone who's going to disagree with that until the child has been given the chance to give the entire answer. And that is so lacking in so many classrooms. And the kids know that because they appreciate each other's work and answers.

Nancy: I've also tried to create kids who are now able to go out and learn for themselves. I suppose fundamentally I'm trying to teach kids how to learn. Did you see anything . . . . ?

Carole: I thought it was obvious when you brought out the fact that they in the future may be going to cope with a teacher who will expect them to do the same thing. Their answers to you proved that--yeah, we may have to do this next year or we may have to do this in another class. I listened there for tone of voice. Were they saying no for other ways of doing it and yes for your way of doing it, and I didn't hear that at all. I heard an acceptance of the fact that that is the way that it may be.

Nancy: Any reservations about what I'm doing?

Carole: That's hard to ask me because I already have a bias. I believe in this type of education, so no it's not reservations. It's realities that despite an entire year of learning how to work in another space, there are still kids who goof off. If I didn't see that, I'd think they were putting on some kind of a phoney act. So that's not a reservation, that's being a kid--I'll get away with what I can get away with. But they're learning, I felt that. I think their work in the room and their ability to articulate proves that they're learning. I had some questions about the groupings. Do they always choose the same partners when they work together in a group of two or three?

Nancy: That's one thing that I am finding which is getting me more and more away from Rita Dunn--there's a lot of what the Dunns have to say that is critical in terms of environment and those kinds of things, but it's the whole prescriptive approach that I'm disagreeing with more and more. Not just on philosophical stance but based very much on what has happened for me this year. Constant changes all the time in what these kids are deciding to do, and who (sic) they're working deciding to working with, space--where they choose to work seems to stay fairly constant.

Carole: Interesting, but do they change groups?

Nancy: They change groups. There's always one group who likes to work at one certain table in the library, and I guess for them it's security, but other kids move in and out behind the dividers depending on the assignment that they're doing. Sometimes they feel they need that little isolation or it may be the mood they're in that day.

Carole: Do many work alone?

Nancy: Yeah.

Carole: Do the same ones always work alone?

Nancy: No.

Carole: That's interesting. Now in the first class when I was going around a kid in the first row, the Oriental boy. In the first row in the very end.

Nancy: Yeah, Peter.

Carole: I said, "Are you working alone?" And he said, "Yeah, I always work alone. Nobody works with me."

Nancy: No.

Carole: Not true?

Nancy: Not true.

Carole: Isn't that interesting.

Nancy: Not true. Peter, I think, is still floundering a little bit, still trying to decide fundamentally what he's good at doing in life. He works with others sometimes; sometimes he works by himself.

Carole: Okay, so you see whole patterns there emerging of different groupings.

Nancy: Different, yeah, and different everything. Different places, different assignments, different groups, different things altogether . . . and I'm finding that with kids that they're saying they'll work with their friends say on a project, and it doesn't go well, like those boys who worked on that play--they were talking about that in the first class--and they discovered that just because these people are my friends, it doesn't necessarily mean that I can work with them.

Carole: A big discovery to make in grade seven.

Nancy: And very important. I guess I've gone through a lot of hard questioning with myself on have I been fair with these kids. And maybe I could have given them a learning style inventory at the beginning of the year--or near the beginning of the year--gotten all this figured out, and then they wouldn't have made bad choices. But then fundamentally I say no, that that's wrong, because first of all a lot of these kids couldn't have told me what they're good at doing. Secondly, I think like a lot of them said today it was through the process of doing things they had never done before, they found out that, yeah, I can do that. So I think they discovered new things about themselves that an LSI at the beginning of the year wouldn't have told them.

Carole: That's interesting because I'm sure there are learning style people who go the other route, save them that failure. For example, when the six boys were doing the play together, I didn't get the sense from their questions with you that most of them resented it failing. That they found out something.

Nancy: At the time they were upset.

Carole: Ah, but now that they have moved away from it . . .

Nancy: We sat down as a group of six and said okay, we've got this problem and we sat down together and worked out a solution. The solution being that they split into groups of three, rather than doing the play, they had a couple of plots going for the play which was one problem with it--they couldn't figure out a plot. And I said why don't you each take one of these plots and now do something with it. Do a play, do a story, do whatever, and they whipped it off in a couple of days both groups, and it worked for them. So we managed to take a negative situation and turn it into a positive one.

Carole: I wonder--what I find in drama that the larger the group, the harder to get to the goal. So the very fact that you told them today that it couldn't be a group larger than three comes from the experience they've already learned as a group whether or not they've ever articulated it. Six is a large group even for adults to come to a decision.

Nancy: Well, sure, even the noon hours and the after schools become a problem. Also if they're a group of three, chances are far greater that each person in the group is going to pull their (sic) weight because they only are a group of three and that helps an awful lot. So you have to be aware of those kinds of things as a teacher.

Carole: Have you covered all the content that a grade seven teacher is supposed to cover this year while you have been working on projects?

Nancy: Actually, yeah, I have.

Carole: That's interesting, isn't it?

Nancy: As things come about as a matter of course. Like, for example, I noticed in some of their writing they were having tremendous difficulty with sentences. They would be fragments or they would be these incredibly long run-ons, and I said to them okay I perceive this problem with your work. We're going to take a couple of periods out and do some stuff with it, then we'll go back into the project and we'll try to avoid that. And it made perfect sense to them. They said okay, we'll do that. So I find that when it comes to skills kinds of things like that, when they know there is a reason for learning it, I can teach it much more quickly than I've ever been able to teach it before because the kids aren't bucking me at all on doing it. Another thing I've tried really hard to do this year is to have them understand why we're doing things.

Carole: That was clear today to me as I listened to you. You asking questions, and they analyzing their own work. It was clear they knew reasons for it. Even some of the questions clarified that--the type of questions they asked about the assignment clarified the whys. For example, when they asked can we do something other than the shoe salesman and the banana and the knife in project four, your answer was not just no you can't, you have to do what I have down there. It was no and let me give you the reason for that.

Nancy: Yeah, and I've tried to be straight with them all the way through. And I think that they're straight with me back. And that's why they can come in and say things like "We're kind of ditzy today."

Carole: What would you do differently next year? IF you had these same kids next year?

Nancy: If I could keep the same ones?

Carole: Yeah, let's say you were just going to come from the university. You had gotten excited about learning styles. You've got these same kids, but you're going to be able to repeat the year.

Nancy: Start sooner, for one thing.

Carole: Start soon with?

Nancy: With the projects and things like that. This has only come about since about the latter part of February beginning of March.

Carole: When you started changing space and light?

Nancy: That I started much earlier--December, January--I found environment very very easy to work with. I suppose September to December I spent trying to get my feet wet with this school, trying to figure out things with the staff. I hadn't taught grade seven for about four or five years--trying to remember what they were like. None of the text books were books I was familiar with. So many things I wanted to do. I couldn't focus in on anything. So I think is started

Carole: You felt fragmented?

Nancy: Trying to vary my teaching approach was I think basically what I intended to focus in on for the

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first part of the year. After that, space and then I got into project work. I would start the whole cycle much much sooner with them. I was very careful this year to keep a low profile. Next year I think I would tell the kids a little bit more about what I was doing and why I was doing it and things like that earlier on in the experience with it. I only started doing self evaluations very recently on project response sheets. I would start doing that very early. I had to throw journal writing out because I didn't have the time for it anymore. I would find time next year to keep that as an ongoing thing with them. I would work things with other members of the staff, and say to them look, my children are working in this space. If this is a problem, please let me know right away--which I did with the librarian, but he sort of hasn't lived up to his end of it and has now just vetoed that area. I would do more checking and that kind of thing making sure that it was okay.

Carole: Okay, anything else that you want to know about my response?

Nancy: You've been in and out of a lot of classrooms. It's hard for me I guess because I live there and live with those kids, and I know them all so well. Primarily as a teacher using this I worry are they learning things, we talked about that--they are. I worry about.

Carole: They're learning things, and they're happy. See, I put those two things together. I've been in classrooms very strict, very formal teachers where it's obvious the facts are being learned, but the kids aren't happy. They aren't relaxed, they're resentful, there's a feeling of stress in the room. I don't get any of that. They're learning, and they're happy. They're obviously very relaxed both with the learning styles that are happening there and with your teaching style. Speak honestly, share humor without putting the other kid down.

Nancy: But yet you see standards still?

Carole: Oh yes, oh yes. The very fact that you refuse to speak or allow someone else to speak while talking is going on and where you can label that in front of the kids, the one rule we must follow in here is--and that's certainly a standard. The standards are in the work that they have turned out all around the room. You can't bluff that. You can bluff a class, you can't bluff the work that is representative of a year. You can't bluff the kind of list that came out of their mouths. You didn't give anybody that list, it came from the kids themselves all the different modes of learning that they have used this year. And to me it is certainly self evaluation when the kids not only generate the list, but are free to check that which they have been successful at. And ask questions like well, what if we have tried it and hasn't been a success or what if it was successful but I didn't like it, like doing it. They're evaluating obviously. And the kid who says everything I did was successful and you could have so easily created a put down there for him, but you didn't and said, "Aren't you lucky," which is a good way for him to think well, now is that really true? Was I really successful in all of those?

Nancy: That's one thing that's been an interesting process that I've gone through. In a way, I am very sad that the year is drawing to a close. When I first started doing a lot of these kinds of things with kids--like you have to go so slowly--especially when you are the only teacher in the school doing it because they come into my room and think ~~oh~~ play time. They had a lot of trouble at the beginning realizing that I can summarize a story by doing a graph or I can summarize a story in writing and essentially it's the same thing. And it took a lot of process stuff with them, and them seeing the products at the end and letting them make their own judgments about it and those sorts of things. They would come into my room and think this is play time or this is the room where the lady doesn't always tell us what to do so she doesn't really care. And now, when they're on project work, boy my time--I just go from place to place and make sure that everybody is okay and do they need anything and I'm very much a facilitator with them now. And it's a good feeling for me.

Carole: But obviously that doesn't take away your teaching role because you were teaching for that first twenty-five minutes of class today. Necessary for the next step to take place. But I can see where it would take time to have kids understand that. Any kids, but kids coming into grade seven who are leaving another whole structure behind to come to a new one, that would be a real learning procedure--to learn how to work alone, to work on task, to make the choices.

Nancy: One thing I do with them that helps is at the beginning of periods I taught them how to do goal setting. And that's why they decide whether or not they need homework tonight--they know what that means because I said alright, you know how many days we've got before this project is due, you know how much class time I'm giving you, you're all at different places and spaces with your project work, figure out how much you've got left to do and set some realistic goals for this class period. What do you want to do? And I said that even if you're working in a group, do this independently, and when you get together in your group, that's your first task is discuss the goals.

Carole: Some university people don't know how to do that much less thirteen year olds. Imagine if they had learned that when they were thirteen.

Nancy: Yeah, then I'll bring them back at the end and say okay, now evaluate. Were your goals reasonable or not? Too big--too small? And so a lot of them have found that that's helped them. Then they go over to the library or whatever or I'm not around, and if I can't help them with one specific thing, they'll go to another task that they set for themselves and wait for me to be able to come.

Carole: Would you start them out at the beginning of the year with fewer choices and work up to more--like a choice of two things and then broaden that?

Nancy: Myth project five was just wild because actually I worked it through and it came up with some twenty-seven different choices if they put all the combinations and permutations in. But the other neat thing was on that one they all had choices within ten minutes--they all knew what they were doing, who they were doing it with, what presentational style they were adopting, and stuff like that . . . . I know this, that I could never ever ever go back to teaching in any other way than I am doing right now. I just simply could not do it. And that's why the decision to stay here . . . I'll stay here as long as David is here because he has total support with what I am doing--absolute total support--and that's critical for any teacher doing this.

APPENDIX E

TIME LINE

September - December

- Orientation to school, students, and grade 7 program

January

- Lighting changed
- Dividers incorporated
- Experimentation with student groupings
- Experimentation with different teaching styles

February

- Myth Project #1

March

- Myth Project #2

April

- Myth Project #3

May

- Myth Project #4
- Myth Project #5

June

- Mystery Unit
- Wind Down